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ABSTRACT

A consultant staff was selected to assist the Select Committee in its search for reform alternatives to achieve more equitable and efficient arrangements for financing and organizing educational services in California. The consultant staff describes here the problems facing California's school finance system and provides some recommendations. The discussion begins with the legal background of the problem--focusing on the 1971 Serrano vs Priest decision which found that in California the quality of a child's schooling depends on the wealth of his school district. A second major problem discussed is the inability of schools to focus resources on the types of children who are in the greatest need and to provide them with the specific kinds of services that would benefit them most. Evidence increasingly reveals that financial aid intended for low-income or low-achieving children frequently is "leaked" to the benefit of children of higher-income households. A third major problem discussed is that the present system of raising revenues for schools places an unfair burden on many of the State's citizens, particularly on low income homeowners and tenants. The report also discusses proposed distribution formulas and provides enrollment forecasts. (Author/JF)

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FINAL REPORT

*to the*

# SENATE SELECT COMMITTEE ON SCHOOL DISTRICT FINANCE

Volume I

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June 12, 1972

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# PREFACE

As the senior consultant can testify, proposals for reform of education finance have increased greatly in sophistication during the last ten years. When a report must be prepared in a short period of time—this effort is a case in point—it is necessary that members of the consultant's staff work in a specialized fashion. In this Preface, I wish to indicate what our division of labor was. First, however, I must note that many details of our proposals were developed in meetings of the entire staff. These meetings, which were generally chaired by Professor James W. Guthrie, sometimes provided the opportunity for remarkably stimulating discussion. Each member of the staff at some point in these meetings contributed important elements to our proposals.

David S. Stern was chiefly responsible for designing specific distribution plans, formulating response functions, and performing simulations. In this work he was assisted at every step by Paul M. Goldfinger. Jointly, David Stern and Paul Goldfinger did the painstaking work of constructing the necessary data files on school district income and expenditure. Analysis of split-roll data, the first such analysis of which we are aware, was undertaken by Stephen Rhoads. Stephen Rhoads also worked with David Stern in producing the simulations of income-based district power equalizing schemes.

Legal analysis was provided with customary flair by Stephen D. Sugarman. For a member of the legal fraternity, Mr. Sugarman displayed an uncommon measure of acumen in analyzing computer runs. This latter talent we also put to good use. George B. Kleindorfer assisted us in solving many problems about funding distributions and carried chief responsibility for projections of student enrollments. Robert Singleton developed our proposals on community control and we stand greatly in his debt. Donald R. Winkler authored a number of important papers on education production functions and on the distribution of funds for improvement of education of students from low-income neighborhoods.

Much of the revenue analysis, including the design of a new circuit breaker property tax relief measure, was the work of Gary Hoachlander. David Stern wrote the section on property tax incidence. Rita Mize kindly assisted us in the analysis of intra-district expenditure patterns. Arthur Webb and William Kent, highly skilled programmers each, spent endless hours in analysis of data.

Editorial and secretarial work was skillfully performed by Loretta Schulz, Linda Lippstreu, Jacqueline Janzen, Donna Bletzinger, and Teri Rudinsky. We are grateful for the good cheer with which they managed the arduous and sustained work of preparing this Report.

In addition to his responsibilities for analytical work, David S. Stern was full-time coordinator of the project in Sacramento and maintained liaison with members of the Legislature, the Senate Research Office, Board of Equalization, Department of Finance, State Department of Education, and numerous school districts, large and small.

The entire staff is deeply grateful for assistance from offices in those said agencies. The list of individuals who assisted us is so long that, with regret, we do not attempt to present it. We cannot fail, however, to mention the extraordinary useful guidance given to us by Ronald W. Cox, Gerald C. Hayward, and Harold Winkler.

Professor Henry M. Levin, Stanford University, kindly read a draft of the Report and provided us with extremely useful criticisms. Dorothy R. Merrick gave editorial assistance in the latter stages without which it would not have been possible for us to complete our assignment.

Professor Guthrie and I served as co-directors of the project. Residual credit for what went right in this study is ours, as is full responsibility for what went wrong.

CHARLES S. BENSON
University of California,
Berkeley
June 12, 1972

# CHAPTER I

# SUMMARY AND LEGAL BACKGROUND

## Summary of Recommendations

In August of 1971, the California Supreme Court gave notice that this State's present system for financing schools may be unconstitutional. In an effort to redress the inequities raised in the *Serrano* decision, the Senate of the State of California contracted in December of 1971 with Professor Charles S. Benson of the University of California, Berkeley, to coordinate the efforts of a consulting staff in arriving at school finance reform recommendations. Specifically, the consultant staff was directed:

> To assist the Senate Select Committee on California School District Finance in its search for reform alternatives to achieve more equitable and efficient arrangements for financing and organizing educational services . . .

This chapter contains two parts. The first section summarizes the Consultant Staff's major recommendations. In addition, it includes a short description of the educational problems the recommendations address, an analysis of the relative advantages of these recommendations, and a comparison with the recommendations contained in several other proposals presently before the State Legislature. The second section provides a legal analysis of the California Supreme Court's opinion in *Serrano v. Priest*.

### Statement of Problems

As described by the California Supreme Court in *Serrano v. Priest*, the State presently labors under a set of school finance arrangements which permit the quality of a child's schooling to depend upon the wealth of his school district. Suggesting means to eliminate such discrimination is the *first* purpose of this Report.

A *second* major problem, treated in Chapter III, is the inability of schools to focus resources on the types of children who are in the greatest need and provide them with the specific kinds of services which would benefit them most. Large numbers of students do not achieve at a level sufficient for personal satisfaction or economic productivity. Recent information suggests that this condition of school failure is becoming worse. Evidence increasingly reveals that financial aid intended for low-income or low-achieving children frequently is "leaked" to the benefit of children of higher-income households. The public is left frustrated with the belief that major programs of compensatory education have failed. In fact, they frequently have not even been tried.

A *third* major problem, discussed in Chapter II, is that the present system of raising revenues for schools places an unfair burden upon many of the state's citizens, particularly low income homeowners and tenants. This regressive feature of the property tax is badly in need of reform.

The recommendations we summarize in the following pages are directed at alleviating these problems.

### Main Features of the Proposals

*Distribution Systems.* Our plans distribute general aid (noncategorical resources) among school districts in full compliance with *Serrano*. We have developed two alternative strategies for doing this: *District Power Equalizing* and *Full State Assumption*. (See Figure I-1A and I-1B in this chapter and all of Chapter IV). As explained in Chapter IV, we prefer District Power Equalizing to Full State Assumption for California at this time, but for those who wish to consider the other alternative, that proposal is presented as well.

In the first year we propose that the State adopt an interim plan which can then become either a District Power Equalizing or a Full State Assumption plan by the third year, depending on the Legislature's choice. The interim plan in the first year would establish a guaranteed minimum level of noncategorical expenditure per pupil, and would further guarantee a limited expenditure increment for any district choosing to levy an additional local tax rate.

In the third year, Full State Assumption would raise the amount of guaranteed expenditure per pupil and would prevent the levying of any additional local taxes except in districts which had previously been spending more than the guaranteed amount. Such districts can maintain their existing levels of expenditure by taxing themselves according to a wealth equalized schedule.

District Power Equalizing would establish in the third year a schedule of tax rates corresponding to different amounts of expenditure, such that any district could simultaneously choose its preferred level of expenditure and the corresponding tax rate required. The District Power Equalizing schedule would pro-

vide all districts with a strong incentive to spend up to the level of the proposed guarantee under the full state assumption plan. Above this level, the District Power Equalizing Plan permits districts to spend without limit, but it does control the demand for new State revenues by requiring significantly greater local contributions in this upper range.

Chapter IV reports the simulated results of these new distribution formulas for the State as a whole and for a sample of individual districts. The results for all districts are printed out in Volume II of this Report.

*Effectiveness and Efficiency.* The major proportion of proposed new program money is to be channeled where it is most needed: namely, *to children with educational disadvantages,* as measured both by *low achievement* test scores, and by *low income.* School districts must demonstrate the fashion in which they intend to spend the money before it is actually allocated. This is to ensure greater accountability both to the State and to parents. (See Chapter III.)

*Property Tax Relief.* An improved *"Circuit-breaker" for protecting homeowners and renters against excessive property taxes* (for schools, as well as all other purposes) is an integral part of our recommendation. The State would relieve individual households of a share of the property tax depending upon the level of their household income. (See Chapter II)

*Auxiliary Services.* The State would pay the *full approved cost of transportation, construction, food services, and children's centers.* The education of special students is financed through the noncategorical grant program by weighting these students. (See Chapter IV)

The consultants have prepared recommendations regarding the means by which existing debt service (for capital outlay in previous years) should be paid; these are contained in Chapter IV. We have also simulated alternative distribution plans based on household income per pupil as a measure of school district wealth. These are discussed in Chapter IV.

#### Requirements for Additional Revenue

If the third-year Full State Assumption program had been in effect in 1970–71, the total additional *State* revenues needed would have been about $1.35 billion. The third-year District Power Equalizing program would have required about $1.29 billion additional from the State budget. These totals include the cost of the circuit breaker and new compensatory education grants, as shown in Table I-2 below.

These figures do not indicate the actual amounts of the new educational expenditures that we propose, because they represent the total of that new spending plus property tax relief. Our version of Full State Assumption would have shifted $669 million from local property taxes to State revenue sources, and would have increased total school spending by $683 million. In contrast, District Power Equalizing would have produced an estimated $459 million of total property tax relief, and would have raised educational expenditures by an estimated $834 million. The requirements on the State budget of implementation of our recommendations are large. A major share of the funds, realistically speaking, must come from broad-based State taxes, for we cannot confidently look to the federal grants or revenue sharing to provide them in the near future.

Within the six-month period of time available to us, we could not undertake a thorough review of the whole State tax structure, especially since our primary responsibility was to make detailed recommendations on education fund distributions. In Chapter II, we express our preferences as to how the needs for additional State revenues should be met, but we deal with this matter necessarily in general terms.

#### Recommendations for Distributing Noncategorical Grants

Figure I-1A depicts the range of options available to school districts under the proposed District Power Equalizing Plan. A district may choose any expenditure level above $500 per K–6 equivalent by levying the appropriate tax rate, as shown for both year 1 and year 3. The schedule provides for a *normal amount* of noncategorical expenditure equal to $700 per K–6 equivalent. Below this point the schedule provides strong financial inducement to districts to raise their levels of spending, but above the $700 level the inducement is less strong. We propose that no district having an existing tax rate of less than $4.00 be allowed to reduce that tax rate. We also propose that no district be allowed to levy a school tax rate of less than $2.50.

Figure I-1B shows the phasing-in of the proposed Full State Assumption plan. Any district with a 1970–71 noncategorical expenditure greater than $700 per K–6 equivalent may maintain (but not exceed) that expenditure level by levying an additional tax rate above $4.00. This tax rate will be fully wealth-equalized by the third year. Districts with lower expenditure levels would have their expenditures raised over time from a minimum of $500 per pupil in the first year to the $700 level in the third year. The tax rate for any expenditure level is shown in this figure. Eventually, as the $700 grant level rises with infla-

tion, all districts will receive the same noncategorical grant, because districts spending more than $700 will be frozen at pre-existing levels.

Both distribution arrangements are explained on the basis of grants for children in kindergarten through grade six. A student enrolled in grades 7 and 8 will receive a grant equal to 1.15 times that of a regular K–6 student (K–6 equivalent); a student in grades 9 to 12 will receive a grant equal to 1.25 times that of a K–6 equivalent; and "special" students receive higher grants depending upon their handicap classification (see Table IV-4). For clarity of exposition, moreover, we offer our summary recommendations initially in terms of the tax rates of unified districts only. However, all of our simulation and costing exercises recognize that existence of separate elementary and high school districts. Table IV-3 shows the required tax rates for each district.

Figure I-1A

DISTRICT POWER EQUALIZING

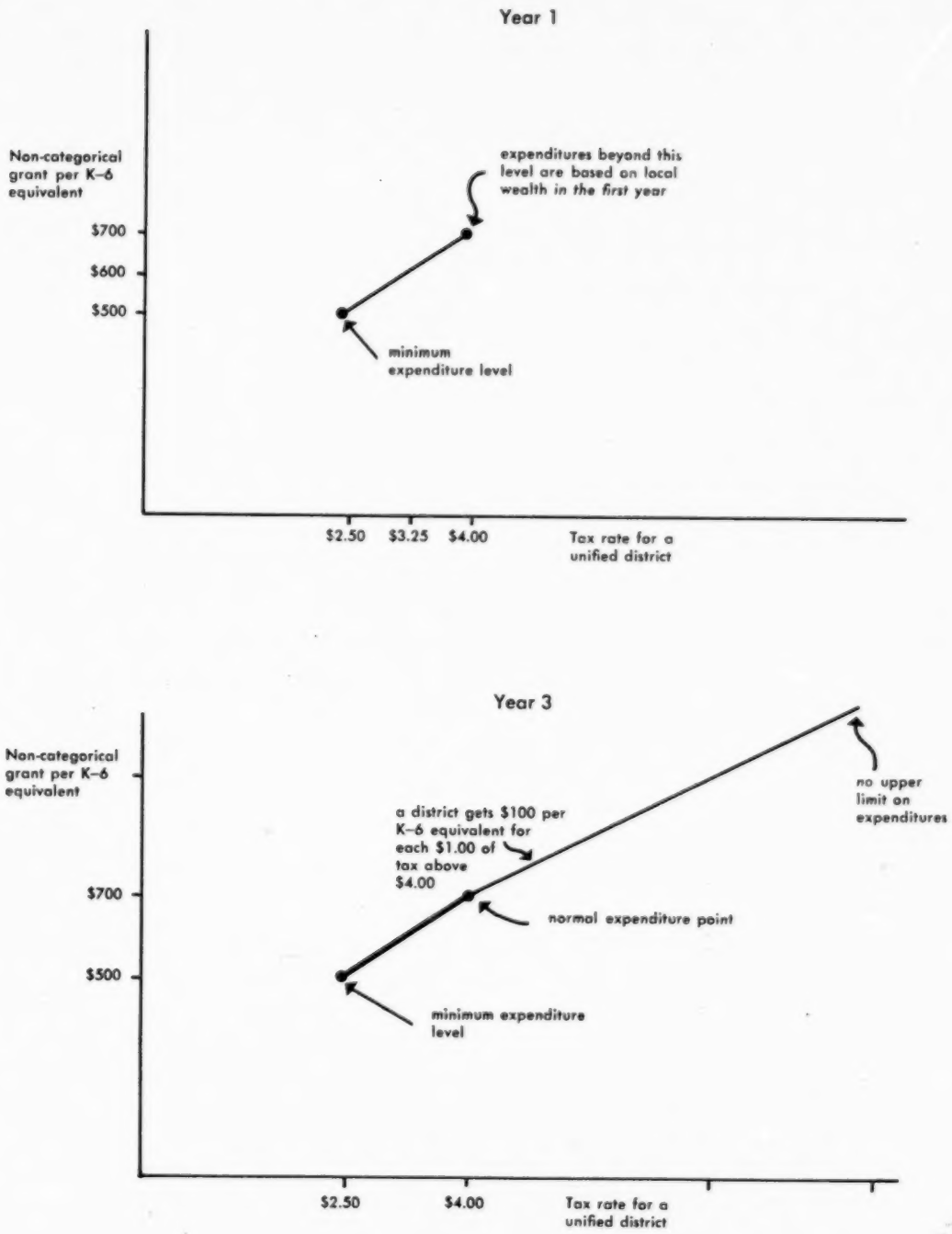
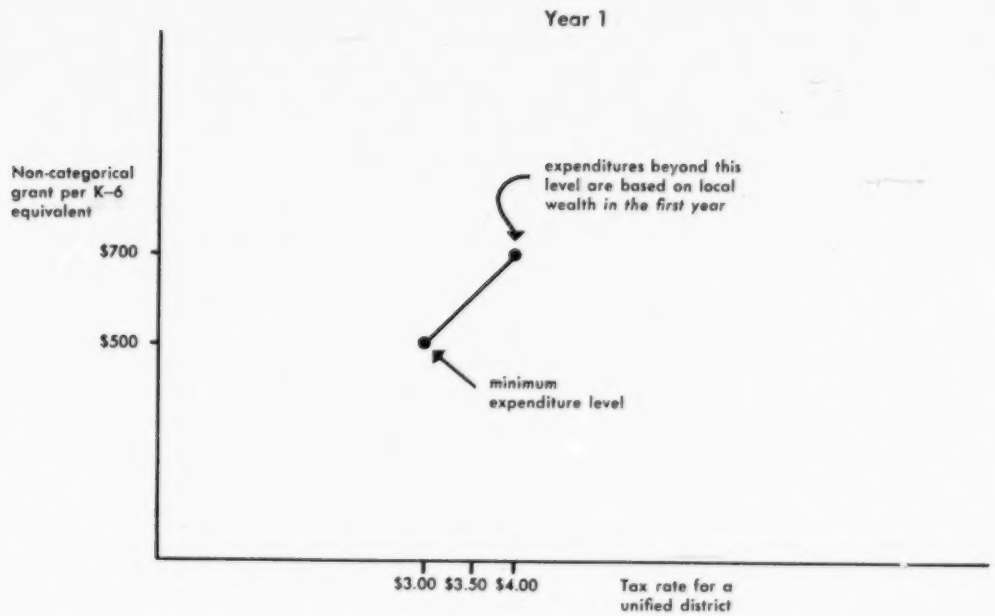
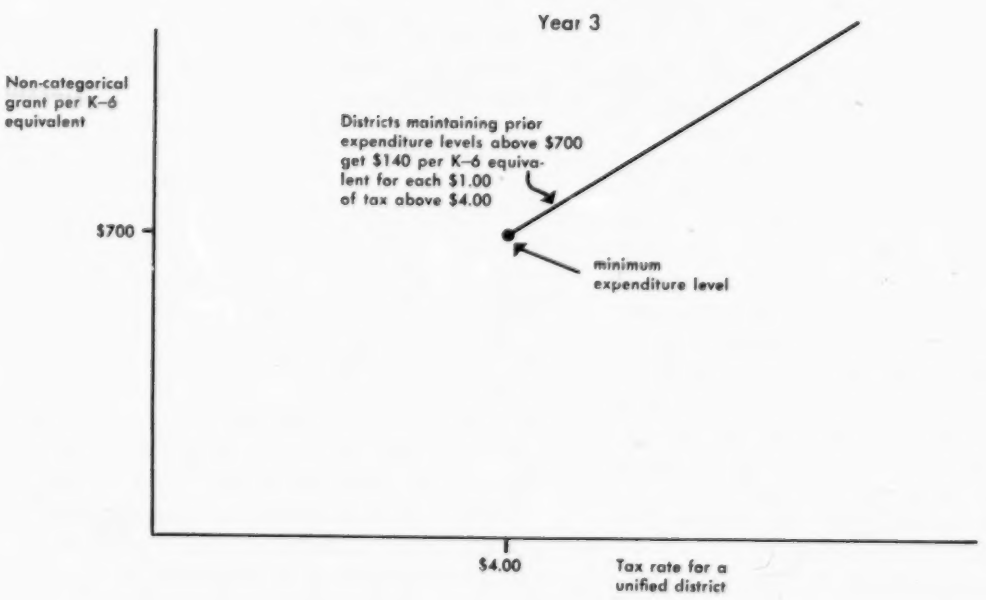


Figure I-1B

## FULL STATE ASSUMPTION


Year 1
Non-categorical grant per K–6 equivalent
$700
$500
expenditures beyond this level are based on local wealth in the first year
minimum expenditure level
$3.00 $3.50 $4.00
Tax rate for a unified district


Year 3
Non-categorical grant per K–6 equivalent
$700
Districts maintaining prior expenditure levels above $700 get $140 per K–6 equivalent for each $1.00 of tax above $4.00
minimum expenditure level
$4.00
Tax rate for a unified district

### Advantages of Select Committee Consultants' Proposals

*Full compliance with Serrano.* The amount of educational resources available to any child in the State will no longer depend on the wealth of the school district in which she or he lives. Guaranteeing equal expenditures for equal tax effort requires state subsidies for less wealthy districts. Larger subsidies are required if the State chooses to subvent wealthy districts which previously have had the benefits of high expenditures with low tax rates. The taxing and spending schedules in Figure I-1A and I-1B are designed to take care of these districts while simultaneously keeping the State's costs within reasonable limits. The proposed schedules also protect wealthy households in districts which have heretofore maintained high expenditure levels, to the point of ensuring that the local property tax payment required of such a household would not exceed the cost of placing a child in private school.

*Focus on the needs of individual school children.* The major portion of proposed new program money—$500 million—is channeled to children who need it most, rather than merely being redistributed through the existing delivery system. One half of this dollar amount will support school programs to raise the achievement levels of children who exhibit low test scores on entering school. The other $250 million will provide supplemental educational services, such as nutrition, medical care, and learning facilities, for children whose families and neighborhoods otherwise cannot provide all the support that children need in order to learn.

*Tax relief focused on individual households for whom the burden is onerous.* Households with income less than $1,000 would have approximately 95 percent of their property taxes, up to $600, paid by the State. Households with incomes over $10,000 would receive no tax relief. Approximately 2.2 million homeowners would receive tax relief averaging $161, and 2.1 million renters would receive an average of $98. The net additional cost to the State from these provisions would be $435 million. Providing relief to families with incomes in excess of $10,000 would, of course, cost more. The property tax circuit-breaker has the added advantage of alleviating the additional tax burden on low-income families who live in districts where assessed value and expenditures per pupil are high, and where the tax rate might increase as a result of the proposed distribution schedules.

*Strengthens local fiscal control.* Local fiscal control would be strengthened especially in low-wealth districts, which would now have a greater range of choice than before. For all school districts, the District Power Equalizing schedule does impose a minimum level of expenditure and a corresponding minimum tax rate. However, the $2.50 minimum tax rate will not be a burden for most districts; in 1970–71 fewer than 1 percent of all students (ADA) attended school in districts with tax rates less than $2.50.

*Full state funding of transportation, construction, food services, and children's centers.* Since these expenses vary greatly between districts, direct state reimbursement of approved costs is more equitable than requiring districts to pay for these items out of general aid. Also, there should be a gain in efficiency; the flow of information about the delivery of these services will enable the Superintendent of Public Instruction to identify the most efficient operations and to disseminate this information.

*Responsible property tax relief.* Fiscal responsibility demands retention of the property tax for schools and amelioration of its defects. We have chosen this course in preference to drastic reductions in present school programs or awesome increases in state revenues to substitute for present local property tax revenues. At the same time, our plan would permit local decision-makers to afford a good program with a total school tax rate of only $4.00. This represents a substantial reduction in school tax rates; in 1970–71 the statewide average total school tax rate was $4.98, and 86 percent of all the State's public school students (ADA) were in districts with tax rates above $4.00.

### Comparison with Other Proposals

Tables I-1 and I-2 compare our proposed District Power Equalizing option with (1) the status quo, (2) the formula developed by the State Board of Education in SB 1171, (3) the so-called "Santa Cruz" plan embodied in AB 1283 as amended by the Assembly on May 24, 1972, (4) the Watson Initiative, and (5) the Governor's proposal announced on May 17, 1972.

Table I-1 displays the tax rates that would be required in three hypothetical elementary districts with varying local property wealth to obtain three given levels of covered expenditure. Failure to comply with the *Serrano* principle is indicated by a difference between districts in the tax rate required for given expenditure levels. *Only our proposal meets the test of full compliance with the principle of fiscal neutrality.*

Violation of fiscal neutrality is starkly visible when comparing the *additional* tax rates required under the different proposals to raise noncategorical expenditures from $800 to $1200 per pupil. *Every proposal but ours would require a greater additional tax*

*rate in the poor district than in the wealthy one.* Thus, all other plans would discourage poorer districts from raising their spending levels up to that of the richer districts, and would thus perpetuate the unjust difference in school resources available to children.

TABLE I-1

## TAX RATES REQUIRED IN THREE HYPOTHETICAL ELEMENTARY (K-6) DISTRICTS TO SUPPORT THREE LEVELS OF COVERED EXPENDITURE PER PUPIL (IN 1970–71 DOLLARS), UNDER ALTERNATIVE SCHOOL FINANCE PROPOSALS

| Level of covered expenditure per pupil | | Assessed value per pupil | | |
|---|---|---|---|---|
| | | $9,000 | $18,000 | $36,000 |
| $800 | Present System | 5.6 | 3.5 | 1.9 |
| | *Sel. Comm. Cons.* | *2.5* | *2.5* | *2.5* |
| | SB 1171 | 2.3 | 2.3 | 2.3 |
| | AB 1283 | 0.5 | 0.8 | 1.2 |
| | Governor | 3.3 | 2.6 | 2.2 |
| $1,000 | Present System | 7.8 | 4.6 | 2.4 |
| | *Sel. Comm. Cons.* | *3.5* | *3.5* | *3.5* |
| | SB 1171 | 4.1 | 3.4 | 3.0 |
| | AB 1283 | 2.0 | 2.0 | 1.9 |
| | Governor | 5.5 | 3.7 | 2.8 |
| $1,200 | Present System | 10.0 | 5.7 | 3.0 |
| | *Sel. Comm. Cons.* | *4.5* | *4.5* | *4.5* |
| | SB 1171 | 6.3 | 4.5 | 3.6 |
| | AB 1283 | 3.5 | 3.1 | 2.7 |
| | Governor | 7.8 | 4.8 | 3.3 |
| Additional tax rate required to increase expenditure from $800 to $1200 per pupil | Present System | 4.4 | 2.2 | 1.1 |
| | *Sel. Comm. Cons.* | *2.0* | *2.0* | *2.0* |
| | SB 1171 | 4.0 | 2.2 | 1.3 |
| | AB 1283 | 3.0 | 2.3 | 1.5 |
| | Governor | 4.5 | 2.2 | 1.1 |

Note: *Expenditures covered.* The plan prepared for the Senate Select Committee on School District Finance differs from others in that the approved cost of transportation, construction, food, and children's centers would be fully paid by the state. Therefore the expenditure amounts listed in the table need cover only general, noncategorical costs. Under the other proposals, the costs of transportation, construction, food, and children's centers either would be paid out of "covered expenditures" with the required tax rates as shown, or would be supported by overrides in addition to these tax rates.

Finally, as noted in Table I-1, our proposal, unlike all others, recommends that the State pay approved costs of transportation, construction, food, and children's centers. To the extent that other proposals leave these costs to be paid in part by local overrides, they further violate the Serrano principle because revenue yields from an override tax depend upon a district's local wealth. To the extent that these expenses are to be met from general aid, they impose an unfair burden on districts where such costs are unavoidably high.

Table I-2 illustrates each proposal's cost to the State. This cost has three components. First is the amount for additional spending on schools. Only this component represents an absolute increase in state-local public sector spending. In contrast, remaining components merely represent a shift from local to state revenues, i.e., property tax relief. Part of this property tax relief is brought about by school tax rate reductions resulting from the new distribution formulas. The rest is property tax relief paid to individual households through the circuit-breaker.

Table I-2 reveals that the other proposals attach highest priority to property tax relief obtained by reduction of school tax rates. This is the least efficient form of tax relief, because it indiscriminately benefits wealthy homeowners and industrial and commercial property owners who do *not* need tax relief. Our circuit-breaker proposal spends the tax relief

TABLE I-2

## COST TO THE STATE OF ALTERNATIVE SCHOOL FINANCE PROPOSALS

(amounts in millions)

| | Additional expenditure | | School tax rate reduction | Household tax relief |
|---|---|---|---|---|
| | General | Compensatory | | |
| 1. *Sel. Comm. Cons.* (1970–71) | | | | |
| District Power Equalizing | 334 | 500 | 24 | 435 |
| Full State Assumption | 183 | 500 | 234 | 435 |
| 2. SB 1171 (1971–72) | 269 | 250 | 373 | 0 |
| 3. AB 1283 | N/A | N/A | N/A | N/A |
| 4. Governor (1973–74) | 168 | 0 | 676 | 339 |
| 5. Watson (1972–73) | −425 | 0 | 1,204 | 0 |

money more efficiently. As a result, it provides more money than the other proposals for educational improvement and compliance with *Serrano.*

As a cautionary note, we point out that the figures in Table I-2, except for Watson, were computed on the basis of certain assumptions about responses of school districts to different finance formulas. These assumptions are incorporated into "response functions," which are then used to estimate local tax rates (and, correspondingly, expenditure levels) that districts would choose if a given school finance plan were put in place. (See Chapter IV.) Necessarily, the behavior of a given district could depart from the course we assume it to take; hence, there is inevitably a fair amount of uncertainty about the estimates shown in Table I-2. However, that amount of uncertainty is sufficiently well bounded that we can state the following: as among the plans shown, our district power equalizing proposal allocates the largest amount of funds, relatively speaking, toward educational improvement and the smallest amount toward district-wide property tax relief.

### *Phasing In DPE*

We propose that the District Power Equalizing plan be phased in over a three-year period so as to avoid disruptive changes in property taxes and expenditures.

In any year of the DPE plan, a district may choose any expenditure level above the minimum grant of $500 per K–6 equivalent. A district can go up to the normal expenditure level of $700 per K–6 equivalent by raising its tax rate from the $2.50 minimum to $4.00. (These tax rates apply to unified districts; see Table IV-3 for the elementary and high school district tax rates.)

In the first year of DPE a district can raise additional funds above $700 per K–6 equivalent based on local wealth. In the second year the wealth equalized range is extended to $1,000 per K–6 equivalent; that is, each additional $100 of expenditure per K–6 equivalent up to $1,000 requires (in a unified district) a $1.00 increase in the tax rate.

In the second year of DPE districts would still support noncategorical expenditures above $1,000 per K–6 equivalent by taxes on local wealth.

Finally, from the third year on, all expenditures are fully wealth equalized. A district can obtain any expenditure level above $700 per K–6 equivalent by raising its tax rate $1.00 (in a unified district) for each additional $100 per K–6 equivalent.

### *Legal Background*

In August of 1971, the California Supreme Court initiated a process which eventually may alter dramatically the system of school financing now employed throughout the United States. If the Court's decision in the case of *Serrano v. Priest* becomes the law of the land, school finance reform will be an urgent matter before nearly every legislature in the nation. The initial *Serrano* decision is not a final one, but, rather, a statement of principles. However, the California system criticized by those principles is essentially the same one employed by 48 other states. The Hawaiian system is the only one which probably does not violate *Serrano*.

The *Serrano* principles have already been adopted and applied by a federal court in Texas which held that state's school finance system to be in violation of the Fourteenth Amendment of the U.S. Constitution. The court has given the Texas legislature two years to enact an acceptable plan. The Texas case, *Rodriguez v. San Antonio Independent School District,* is presently under consideration by the U.S. Supreme Court.

In numerous other states litigation is underway. Courts in Minnesota, New Jersey and Wyoming already have held their states' systems of school finance to be invalid. Most other cases are in a preliminary procedural posture. At this stage of the litigation at least, it is clear that the courts are not specifying new funding systems which legislatures must adopt; rather they are holding existing plans to be unconstitutional and mandating that legislatures enact ones that are not. That is, thus far, courts have simply foreclosed one or perhaps two policy choices; a myriad of other choices still exists and will have to be resolved before any new "system" can be put into operation. In short, the process implied by *Serrano* requires the participation of the legislature. For the legislature this represents both a responsibility and an opportunity.

As for *Serrano* itself, it should be reemphasized that the California Supreme Court in its August decision and subsequent modification order has simply described an apparent injustice; it has not actually ordered any one to take any action to change that California school finance plan. Rather, it has returned the case to the Superior Court in Los Angeles with instructions that the trial judge apply the newly announced principles to the facts before him. The case is now at the pre-trial state. It is likely that the trial will not be completed until after the U.S. Supreme Court has made some disposition of the Texas case, *Rodriguez.*

Most legal observers agree that the nature of the *Serrano* principles combined with the judicially noticed facts about the California system mean that the *Serrano* plaintiffs will eventually have a final court order which demands that the California system be changed; provided, *Rodriguez* is affirmed.

What this means for the legislature is a matter of interpretation. By acting soon it is probably assured of flexibility; on the other hand, despite the apparent invidiousness of the present plan, delay now will not cause anyone to be held in contempt of court.

Before turning to details, it will be helpful to state two things that the California Supreme Court neither said nor implied. First, the court did not say that the property tax is an unconstitutional tax; rather it is the particular combination of local property taxation for schools and state school aid comprising California's school finance system that is impermissible. The property tax may continue to be used in school finance, if the legislature chooses. Second, the court did not say that the State must shift to a plan which provides equal dollars per pupil; the "one

dollar-one scholar'' analogy to the reapportionment rules is simply inapt.

### What Serrano Covers

The *Serrano* opinion only describes the financing of ''current'' expenditures (teachers, books, maintenance, administration, etc.) for California's elementary and secondary schools (kindergarten through twelfth grade). In fact, during the forthcoming *Serrano* trial, the decision may be given broader application. The two most critical areas which may additionally be covered are (1) the financing of ''capital'' expenditures (essentially school buildings) in elementary and secondary schools and (2) the financing of the community college system.

In papers filed with the court in connection with its modification order, the plaintiffs asserted that they intended their complain to cover capital expenditure matters; the defendants on the other hand asked the court to state that capital expenditure financing was not at issue. The court did not deal with this dispute in its modification order; it simply emphasized that it had not intended its decision to bring a halt to the present system or to put ongoing financing (current or capital) in jeopardy until there could be a final decision in the case.

It is clear that the same kind of evil upon which the court fastened with respect to current expenditures exists with respect to both capital expenditure financing and community college financing. In each instance, local districts are able to generate funds for these educational services from their local property tax base with the result that the ''rich'' districts have substantial advantages over ''poor'' ones.

''Capital'' expenditure matters are very complicated both because there are outstanding bonds and a substantially varied stock of physical plant. This report will deal with debt service and capital outlays. Community colleges, on the other hand, are not considered here.

### What is Said to be Unconstitutional about the Present System of Financing Elementary and Secondary Education?

The most important point to emphasize here is that it is not what the State does through ''state aid'' that is the heart of the problem. In a sense it is what it fails to do through state aid that is wrong; better put, it is what the State allows local districts to do that creates the constitutional violation.

Prime ingredients in the analysis, then, are the facts that (1) the State permits local school districts to exist, (2) the State gives each district the power to raise money through a local property tax on property physically located within the district's border, (3) the State permits each district to keep the money it raises, knowing that from district to district the ability to raise money for schools varies widely because of the dramatically uneven distribution of property wealth about the State, and (4) the State fails to equalize these wealth differences through ''state aid.''

As the Court sees it, since there are wealthy and poor districts and district wealth counts, this method of school finance is ''wealth discriminatory.''

Note that there is used here a special definition of wealth: each district has so much assessed valuation and so many public school students to educate; hence a measure of a district's ''wealth'' is its assessed valuation per pupil.

From these primitive statements, the phenomenon described in the court's opinion, which uses Beverly Hills Unified School District and Baldwin Park Unified School District as examples, is clearly predictable. In Beverly Hills, a wealthy district, school expenditures per pupil are high and the tax rate for schools relatively low; in Baldwin Park the opposite is true.

In sum, the combination of facts (3) and (4) above is what makes the present plan unacceptable. While the ''state aid'' portion of the school finance plan may lessen its invidious nature, so long as it is insufficient, local property taxation yields unfairness. While the State clearly does not do all that it could do toward equalization with the present amount of ''state aid'' money, at bottom, under the present plan, the State cannot do enough. So long as local districts can and do exploit local wealth advantages to any significant degree, the present system will not pass the *Serrano* test.

### The Legal Principle of Serrano

The California school finance system outlined above appears to violate the ''equal protection'' clause of the Fourteenth Amendment of the United States Constitution which provides that ''No state shall . . . deny to any person . . . the equal protection of the law.'' This rather vague phrase has been interpreted by the California and United States Supreme Courts to mean, in general, that when (1) a fundamental interest is at stake, (2) there is a discrimination (or differential treatment of persons) which turns upon a suspect classification, and (3) there is no compelling state interest to justify the discrimination, then such discrimination violates the Constitution.

In *Serrano* the court held that education is a fundamental interest, a conclusion which, while perhaps

obvious to some laymen, probably represents new law so far as the equal protection clause is concerned. In doing so, the court likened education to other previously determined fundamental interests such as voting, political association, free speech, and travel. The court reaffirmed existing doctrine that wealth discrimination is a suspect classification and then concluded, as outlined above, that the school finance system is seemingly wealth discriminatory. Finally, the court determined that there is no compelling state interest in the present system. The most difficult issue in connection with this test involves "local control;" on this point the court stated, first, that local administrative control is possible with a wide variety of financing systems and, second, that local fiscal control (or option) is genuinely available only to the rich under the present plan.

The court may also have decided the case under those portions of the California Constitution which contain the California equal protection clause, as developed in judicial decisions; however, this point in the opinion is unclear and the subject of debate.

Taking this holding and translating it into a simple, constitutional statement about school finance, results in the following: *the quality of public education (perhaps measuring quality by dollars available for spending) may not vary because of the varying wealth of school districts.* Note well that this is a negative principle and, as indicated previously, it merely forecloses one policy choice, the choice to favor rich districts.

It is fair to say that, even though the bulk of the court's opinion, dealt with wealth discrimination, it is possible to analyze some of its language, as some observers have, and conclude that the court was also prescribing a second or perhaps more encompassing negative principle: "there may be neither geographic discrimination nor wealth discrimination." A ban on geographic discrimination would mean that there could not be local fiscal option regarding education, for the differential willingness of the local districts to exercise that option will mean that children, arguably, will be hurt because of where they live. This is an important, but currently insoluable, point. Were this second principle part of *Serrano*, then "power equalized local add-ons," a frequently discussed part of reform proposals, would not be allowed.

### *Possible State Responses to Serrano*

With regard to raising revenues for public education, it is fair to say that the State is permitted under *Serrano* to employ practically any single or combined form of taxation it desires. In short, it may use statewide *property taxes on all property, statewide property* taxes on certain kinds of property (although there may be a California constitutional problem in splitting the tax roll), personal and corporate income taxes, value added taxes, sales and use taxes, and the like.

Also, *local* taxation of property or income may be permitted (if *Serrano* is limited to the wealth discrimination theory); provided that there is sufficient additional state participation to neutralize the otherwise invidious results of local taxation. This is better explained in the paragraphs below dealing with revenue distribution. Let it simply be said here that *Serrano* need not be read to *require* full state assumption of the school revenue raising function. In general, therefore, while some taxation system may be more equitable than others, the judgment as to what is most appropriate is still left to the legislature.

Turning to revenue distribution, there are three classes of school finance plans which are typically discussed as responses to *Serrano*: (1) Full State Assumption, (2) District Power Equalizing, and (3) raising the foundation on the present foundation plan. It seems appropriate to arrange this analysis in terms of the three.

Full State Assumption is said to be a centralized solution because local taxing power for schools is eliminated; there is no decentralized fiscal option to add on to what the State provides. All forms of genuine Full State Assumption should meet the *Serrano* rule, although arbitrariness might invite a finding that some other constitutional principal was violated. In short, if the State takes over the collection and distribution of school funds, it could distribute funds according to any educationally reasonable criteria.

The easiest Full State Assumption plan to imagine is one which calls for the distribution *to school districts of an equal amount of money for every pupil.* However, not only is this solution not required but also it is probably both unwise and an unlikely result. Also, it is ambiguous. The method for counting how many pupils a district has is itself a policy matter; there are numerous alternatives such as pupils residing in a district, pupils in actual attendance, enrollment, classrooms full, etc.

Here are just a few of the criteria that might be employed as the basis for revenue distribution other than "one dollar-one scholar." They may be grouped into categories of differential educational needs and

differential educational costs. Funds might be allocated because of different intellectual gifts of children, because of educational disadvantages, because of age differences, because of physical handicaps, because of curriculum differences, because of willingness to experiment, because of cost of living differences from place to place, because of municipal overburdens faced by cities, or because of different transportation needs. These differences might be embedded in formulas or be accounted for through categorical grants.

One need not assume that moneys would be distributed from the State to local school districts. That is, once the local school district loses its taxing power, the role of school districts can be re-examined. Funds, for example, could be distributed to county organizations which either operated schools or redistributed the funds; similarly, funds could flow directly to schools or, if one wanted to embark on a voucher program, directly to families and pupils. Furthermore, state funds need not be granted only to one organizational level. *Serrano* certainly permits regional provision of certain services and school provision of others. Finally, the State could choose to operate schools itself, though this is probably an unlikely result.

It should be emphasized that Full State Assumption of educational costs can be combined with various types of state regulation. There are questions such as whether the State, if it adopts such a uniform funding scheme, should participate more or less than it does today in, say, teacher hiring practices, including salary determination. If the State is to distribute money according to formulas which take differences into account or through categorical aids, as described above, it must decide the extent to which it will require school spending patterns to be consistent with the basis it adopts for distribution. For example, if more money is given to a school for each educationally disadvantaged child, then must the school actually spend the money specifically on that child? What if the school believes it is best to mix all of its students together and spend evenly on them?

Full State Assumption, then, is not a single and simple plan; it requires the making of a number of important policy choices.

Having considered the disparities pointed to by the court in *Serrano*, some have suggested that they might be significantly reduced by an increase in the guaranteed spending level of the existing foundation plan. The benefit seen in this approach is that it preserves local option to spend more for schools, if a local school district so desires. The problem with this approach is that, if any significant number of districts do add on to any significant degree, then the larger foundation grant has not eliminated the essential evil pointed to in *Serrano*; rich districts will be able, and predictably will be the ones, to spend more. If the foundation grant is large enough so that local add-ons are relatively insignificant, then the plan, in effect, becomes Full State Assumption.

Therefore, if local fiscal option is desired, some system must be developed which neutralizes the local wealth advantage of rich districts. "District Power Equalizing" systems are intended to do this. They provide every local district with the same power to raise money for schools; this is to be accomplished through a state-aid-local-tax arrangement which effectively makes all districts equally wealthy for school purposes. With such equal wealth, the districts are then free to employ that wealth as they see fit, drawing upon it and taxing themselves consistent with their demand for education. Two districts with equal tax rates would obtain equal resources per pupil, regardless of any actual differences in district wealth per pupil.

Just as Full State Assumption need not be keyed to school districts, neither need District Power Equalizing be. County and family power equalizing are two imaginable alternatives. Power equalizing plans can have provisions for need and cost differentials built into them just as is the case with Full State Assumption plans.

A final alternative solution to Serrano is redistricting designed to ensure districts with approximately equal wealth (instead of having constructively equal wealth as under power equalizing). This, however, is somewhat impractical because it probably would require consolidating all present local school districts into a few extraordinarily large units.

Whatever plan is chosen, the legislature could count on judicial tolerance of a "phasing-in" period. For example, Full State Assumption need not happen in one year: the State might provide $700 per pupil in state funds to all districts, allowing districts that now spend more to continue to do so through local tax collection for the excess; provided that those higher spending districts were restricted in their spending and others were gradually increased to meet them.

Now the Legislature has time to act carefully and intelligently. The intensity of the pressure on it can be expected to vary over time. It would be prudent to conclude that judicial pressure would be lighter as a result of early rather than late school finance reform

action. Of course, *Serrano* is not the only pressure for reform. Numerous school finance critics have for years been calling for the kinds of change to which *Serrano* speaks. In the view of many, courts are only now beginning to declare invidious those things which others have long known needed changing. Simply stated, there is a strong argument for reforming school finance even in the absence of a specific court mandate.

## CHAPTER II

# THE PROPERTY TAX AND ALTERNATIVES

Considerations of equity and fiscal responsibility both call for continued reliance upon the property tax as a main source of revenue for public schools. At the same time, strong measures must be taken to pull the regressive teeth from the tax. Furthermore public sentiment clearly favors reduction of the share of school costs paid by the property tax. This chapter describes the California property tax in comparison with other states; summarizes the theory of incidence; proposes a "circuit-breaker" program for property tax relief based on household income; criticizes the Watson Initiative as an unwise attempt to curtail the property tax without really reforming it; and, finally, examines some alternative sources of revenue to supplement the property tax.

### *The Property Tax in California Compared with Other States*

For California in 1970, the property taxes generated $5.23 billion dollars, representing 47 percent of all State and local tax revenues. No other single state-local tax source generated even half this amount. The sales tax raised $1.75 billion, or 16 percent of state and local revenues. In third place was the personal income tax contributing $1.15 billion or 10 percent of the state-local total. Only twelve states in 1970 exceeded California in the proportion of state-local revenues raised from the property tax. The median state raised only 36 percent, compared to California's 47 percent.

Because California relies heavily on the property tax relative to other State and local taxes, the property tax burden on Californians is large compared to other states. For instance:

California property taxes per capita ($262.16 in fiscal 1970) were the highest in the nation. The median state was at $162.28.

California imposed a higher effective property tax rate (2.22 percent) on FHA-insured homes in 1969 than all but eleven states, with the median state at 1.73 percent.

California property taxes on FHA-insured homes in 1969 took a greater percentage of income (3.58 percent) than all but eight states, with the median state at 2.42 percent.

California property taxes per $1,000 of personal income in fiscal 1970 ($62.71) ranked fifth among the 50 states, with the median state at $43.01.

### *Who Pays the Property Tax?*

The question of who really pays the property tax is presently caught up in controversy among economists. There does seem to be nearly unanimous agreement that the tax on the value of land alone is paid by landowners. That is, when the property tax is initially levied, or when it is increased, the net rental to land decreases by the amount of the tax, and the value of land falls as a result. Owners of land cannot pass on the tax by raising land rents, because this would reduce the demand for land, and the total supply of land is fixed. Rather than leave some land vacant, landowners must accept lower rents.

What remains uncertain is who ultimately pays the property tax on structures and improvements. To what extent do the owners of buildings shift the property tax by raising the price of the things they sell? In the case of owner-occupied houses it is again clear that the owners pay the property tax; since they are also the consumers, there is no one to whom they can shift the tax. But what about rented housing? And how does the property tax affect prices and rates of return in agriculture, manufacturing, and other industries exposed to the tax?

A concise summary of the controversy surrounding this question appears in the most recent Brookings Institution report on national economic issues. They describe the question as follows:

> The traditional view of the incidence of the property tax has been that renters pay the tax on residential buildings through higher rent payments and consumers in general pay the property tax on commercial and industrial property in the form of higher prices for the goods they buy. This view assumes that property taxes initially reduce the rate of return to investors in property improvements and that the lower rate of return slows the flow of new investment over time, thereby driving up the prices of business services provided by such assets until the old rate of return to the owners has been restored. Renters and consumers thus end up paying the taxes.
>
> An alternative view is that the initially lower rate of return on property improvements diverts investment into untaxed (or more lightly taxed) areas of the economy, but does not affect the *total level* of investment. This lowers returns on other

kinds of investment generally, until a point is reached at which all owners of capital receive a lower rate of return because of the property tax. Under this view, a property tax is ultimately borne in a general way by all owners of capital. [1]

For the traditional view the Brookings team cites Dick Netzer,[2] and for the more recent theory they rely on an article by Peter Mieszkowski. [3]

The Brookings report then presents the following table, which represents the percentage of current income paid in property taxes by each income class, depending on whether the tax on buildings and improvements falls on the owner of capital or on renters and consumers.

TABLE II-1

**EFFECTIVE GENERAL PROPERTY TAX RATES [a] UNDER ALTERNATIVE INCIDENCE ASSUMPTIONS, BY INCOME CLASSES, 1972 INCOME LEVELS**

(Income classes in thousands of dollars; other numbers in percent)

| Income class [c] | Effective property tax rate [b] assuming that the tax on improvements is borne by | |
|---|---|---|
| | Capital [d] | Renters and consumers [d] |
| 0–3 | 7.2 | 15.0 |
| 3–5 | 5.4 | 8.0 |
| 5–10 | 3.6 | 5.9 |
| 10–15 | 2.6 | 4.9 |
| 15–20 | 2.9 | 4.7 |
| 20–25 | 3.7 | 4.4 |
| 25–50 | 5.7 | 4.4 |
| 50–100 | 14.1 | 3.7 |
| 100–500 | 22.4 | 3.5 |
| 500–1,000 | 24.5 | 3.0 |
| 1,000 and over | 18.2 | 2.1 |
| All classes | 5.0 | 5.0 |

[a] Includes all property taxed by state and local governments, such as automobiles; livestock, commercial, industrial, and residential real property; and so forth.
[b] Tax as percent of income.
[c] Income is equal to the sum of adjusted gross income, transfer payments, state and local government bond interest, and excluded realized long-term capital gains.
[d] Property taxes were distributed as follows. On the assumption that the tax on improvements is borne by capital, all property taxes other than levies on nonfarm motor vehicles and agricultural property were distributed among families on the basis of total property income; the tax on cars was distributed using the value of cars owned by the family; and agricultural taxes were distributed on the basis of gross farm value. In calculating the burdens on the assumption that the tax on improvements is borne by renters and consumers generally, it was assumed that the tax on owner-occupied homes falls on the owner-occupier (since he pays the tax either as a consumer of housing services or as an owner of property) and that the tax on apartments rests on tenants in proportion to rents paid. The tax on commercial and industrial improvements was allocated on the basis of general consumption (on the assumption that higher rentals paid by business would be shifted forward in the form of higher prices), and the tax on farm improvements was allocated among farmers and consumers in general. The tax on land was distributed on the basis of income from capital under both sets of assumptions.

Source: Schultze, *op. cit.*, pp. 445–446.

[1] Charles L. Schultze, Edward R. Fried, Alice M. Rivlin, and Nancy H. Teeters, *Setting National Priorities: The 1973 Budget*, Brookings Institution, Washington, D.C., 1972, p. 444.

[2] Dick Netzer, *Economics of the Property Tax*, Brookings Institution, Washington, D.C., 1966.

[3] Peter Mieszkowski, "Tax Incidence Theory: The Effects of Taxes on the Distribution of Income," *Journal of Economic Literature*, December, 1969, pp. 1103–1124. Mieszkowski's argument follows in the tradition of H. G. Brown (*The Economics of Taxation*, 1924) and A. C. Harberger ("Efficiency Aspects of Taxes on Income from Capital," in M. Kryzaniak, ed., *Effects of Corporate Income Tax*, 1966).

The first column of Table II-1 actually overstates the relative burden on high-income groups that would result if returns to capital fell by the full amount of the property tax. The reasons is that the numbers in the first column take no account at all of relative price changes. Migration of capital out of rented housing, agriculture, and other industries subject to heavy property taxes would drive up the relative prices of these goods. This would raise the cost of living for low-income groups, because low-income households spend larger proportions of current income on housing and food. At the same time, relative prices in lightly taxed (labor-intensive) industries would decline, which would benefit high-income households, because they tend to spend a larger proportion of their income on services. Thus, the first column of Table II-1 does not really represent the polar case—it is beyond the pole. Even if returns to capital fell by the full amount of the tax, the burden on low-income groups relative to high-income groups would be greater than shown.

Though the exact pattern of incident remains uncertain, the implication for policy is quite clear: *low-income households do need relief from the property tax, but elimination or reduction of property tax rates across the board would also give unwarranted benefits to high-income owners of capital.* Assuming that reality lies somewhere in between the two columns of Table II-1, the incidence of the property tax is U-shaped. That is, households with annual income under $10,000 pay about 5 to 10 percent of it in property taxes; households with income between $10,000 and $50,000 pay 4 to 5 percent; and households making more than $50,000 pay about 8 to 12 percent in property taxes. Few would assert that any household with income over $50,000 needs property tax relief. But households earning less than $10,000 may find the property tax heavily burdensome. Therefore property tax relief should be focused on these low and moderate-income households, rather than being squandered on high-income groups through reduction or elimination of property taxes across the board. To achieve this kind of progress, effective property tax relief is exactly the aim of our proposed circuit-breaker.

### *The Circuit-Breaker: A Mechanism for Property Tax Relief to Households of Low and Moderate Income*

California already possesses a legal vehicle for household tax relief in its Senior Citizens Property Tax Relief Act funded at the 1971 Regular Session

of the Legislature. Our proposal would extend this coverage by making four major changes in the law:

1. Removal of the age restriction currently set at age 62.
2. Provision for relief to renters and owners of cooperatives and multiple family units.
3. Redefinition of relief ceiling.
4. Redefinition of the methods of claiming relief.

"Claimant" means an individual who has filed a claim under this plan, is a member of a household, and was a resident of California on or before the first day of January preceding the end of the fiscal year for which a claim for assistance is filed. "Income" is defined as the sum for all members of the household of adjusted gross income as used for purposes of the California Personal Income Tax Laws.

The proportion of property taxes to be reimbursed by the State is based on the claimant's household income, as shown in Table II-2.

TABLE II-2

**PERCENTAGE OF PROPERTY TAX TO BE REIMBURSED BY THE STATE, DEPENDING ON HOUSEHOLD INCOME**

| If the total household income is not more than: | The percentage of the first $600 of levied property taxes to be reimbursed or credited is: |
|---|---|
| $1,000 | 96 |
| 1,500 | 92 |
| 2,000 | 92 |
| 2,500 | 88 |
| 3,000 | 80 |
| 3,500 | 70 |
| 4,000 | 60 |
| 4,500 | 52 |
| 5,000 | 45 |
| 5,500 | 38 |
| 6,000 | 32 |
| 6,500 | 26 |
| 7,000 | 21 |
| 7,500 | 16 |
| 8,000 | 12 |
| 8,500 | 8 |
| 9,000 | 6 |
| 9,500 | 5 |
| 10,000 | 4 |

For purposes of this plan, "property taxes accrued" is defined for homeowners as current property taxes (exclusive of interest, penalties, principal payments on improvement bonds and charges for service) levied against a claimant's homestead by any taxing agency. Assistance is equal to the applicable percentage applied to "property taxes accrued" of an amount up to and including $600. No assistance is allowed on that portion of the tax bill in excess of $600. The $600 ceiling on the relief plan is based on the median full value of dwellings in California in 1971, which was approximately $23,000. Assuming an average tax rate of $10.00 per $100 of assessed valuation (25 percent of full value), the average tax payment on median dwellings is $575, rounded to $600.

For owners of cooperatives or owners of a homestead where such homestead is an integral part of a large unit such as a farm or a multipurpose or multidwelling building, "property taxes accrued" is that percentage of the total property taxes accrued as the value of the homestead is of the total value. In no case is assistance allowed for property taxes paid in excess of $600.

For renters, "property taxes accrued" is defined as a representative amount equal to 4 percent of income. This figure assumes that, on average, gross rent is about 25 percent of income and property taxes about 20 percent of gross rent. Thus property taxes on average would represent 5 percent of income. But allowing all renters to claim property taxes equal to 5 percent of income would overstate the tax paid by some renters. Therefore it seems preferable to let any renter claim a standard allowance for imputed property taxes equal to 4 percent, without having to submit any evidence of the actual amount of rent paid. A household that really did pay more than 20 percent of its income for rent could claim imputed property taxes equal to 20 percent of actual rent paid, but it would also be required to furnish documentation of actual rent paid. This procedure gives renters the same kind of choice between standard or itemized deductions in claiming property tax relief that is now provided for anyone filing an income tax return. The amount of relief shall equal the applicable percentage from Table II-2 applied to the imputed amount of property tax up to and including $600. No assistance is allowed for representative amounts in excess of $600.

The procedure for claiming relief would use the administrative machinery of the state income tax. Regardless of actual income tax liability, each California resident desiring property tax relief would file an income statement with the Franchise Tax Board between January 1 and April 15. Prior to but no later than the following November 1, the Franchise Tax Board would return to eligible homeowners a statement verifying the amount of adjusted gross income reported. Property tax bills mailed during the first week in November would include instructions for claiming relief. The taxpayer would calculate his property tax liability using the enclosed income table and return the Franchise Tax Board verification with his check.

On or before December 1 of each year, the Franchise Tax Board would pay to the counties 50 percent

of the Board's estimate of the amount of homeowner relief payable to the counties under this proposal. On or before June 30 of each year, the Board would revise its estimate and pay to each county 80 percent of the revised estimate less the amount of payment made on or before December 1 of the preceding year. The balance in excess of previous payments would be payable to the counties on or before September 30 of each year.

A renter claiming relief would simply submit a regular income statement, which would have a place to check whether the renter chose to count imputed property taxes as 4 percent of income or 20 percent of actual rent paid. The Board would calculate his relief, credit it against his state income tax liability and refund any excess to the renter.

A special problem arises for Welfare recipients claiming relief under this proposal. Federal regulations require reducing Welfare payments by an amount equivalent to cash income received. Direct application of this proposal to Welfare recipients therefore would have the effect of merely replacing rather than supplementing Welfare payments. A solution to this problem is available by directing individual relief to Welfare Offices with the stipulation that it be added to the individual's shelter allowance for "unmet shelter needs."

For renters who choose to claim property tax relief based on actual rent paid, there are some problems in defining what rent includes. Rent payments reflect different amounts of services provided by landlords—heat, water, electricity, recreational facilities, parking, garbage collection, furniture, etc. Water and garbage collection are included in most rental agreements and could arbitrarily be assumed to be included in all rental payments. To avoid over-reimbursing tenants who receive additional services, standard percentage deductions from gross rent can be made for each of the following: heat; gas or electricity; pool; sauna, or health club; furnishings.

Unrelated individuals sharing rental units would be required to submit income statements to the State and each member would be listed on relief claims. All statements would be made under penalties of perjury, and the State could perform periodic audits.

All renters claiming relief based on actual rent paid could be required to file with income statements a form similar to the one set out on page 17.

A fully accurate estimate of what the circuit breaker would cost requires knowledge of the numbers of homeowners and renters within specified income categories and information on their property taxes or rents paid. Unfortunately, cross-referenced data of this sort is not available. Consequently, the following procedure has been used to arrive at a rough approximation of cost.

First, using information on the number of Federal Personal Income Tax Returns filed in California, listed by level of adjusted gross income, the number of returns at each level was calculated as a percentage of total returns. The percentage in each income bracket was multiplied by the number of owner-occupied units in California (a number secured from the Office of Senate Research) and the number of rented units in California as listed by the 1970 Census. The products were then used as an estimate of eligible claims within each income category. The procedure propably overstates the number of owner-occupied units in low-income categories and understates the number in higher income categories (*vice versa* for renter-occupied units) and therefore overstates actual costs.

The estimated number of renters and homeowners in each income bracket were then multiplied by the estimates of average property taxes paid by homeowners and renters within each bracket. The estimated property tax payments were updated from a study of John Osman of property tax incidence in California.[4] Finally, the estimated property tax payments in each income bracket were multiplied by the reimbursement percentages recommended in Table II-2. These final products were summed to arrive at an estimated gross cost of $564 million.

The estimated gross cost of $564 million represents an average payment of $161 to 2,193,989 homeowners at a total cost of $353 million, and an average payment of $98 to 2,158,863 renters at a total cost of $211 million. To arrive at net additional cost to the State budget, the following deductions have been made:

$56 million already appropriated for Senior Citizens Relief;

$25 million to allow for proposed reduction in school property tax rates;

$48 million for estimated unclaimed relief.

Total net new cost to the State is then estimated to be $435 million.

### *Critique of the Watson Initiative*

The circuit-breaker is our proposed solution to the property tax problem. A very different solution is embodied in the so-called Watson Initiative, which

[4] Osman's results were reported by John E. Coons and Stephen D. Sugarman, "Family Choice in Education: A Model State System for Vouchers," *California Law Review*, Vol. 59, No. 2, March, 1971, pp. 321–438, Tables III-B-1, III-B-3, and III-B-6. We wish to thank Professor Osman for his assistance in updating these tables.

| Applicant's Last Name | First | Middle | Applicant's Social Security Number |
|---|---|---|---|
| | | | |
| Address Street | | | Spouse's First Name and Initial |
| | | | |
| City | State | Zip | Applicant's Date of Birth Month / Date / Year |
| | | | |

**Rental Identification**

Landlord's Name — Address

Monthly Rent | Is unit furnished or partially furnished by landlord? _____ Yes _____ No

Are any of the following services included in monthly rent as listed above: electricity, gas, parking?
_____ Yes _____ No

**Age**

List all members occupying rental unit who had income and contributed to payment of household living expenses in 19____.

| Full name of household member (do not list yourself or spouse) | Social Security No. | Relationship to you | AGI as reported on Calif. Income Statement |
|---|---|---|---|
| | | | |

Combined household AGI of all household members, including yourself and spouse, who contributed to household living expenses in 19__: _____

| | |
|---|---|
| 1. Gross rent for 19____: | a. _____ |
| 2. If unit was furnished or partially furnished by landlord enter 5% of line a. b. _____ | |
| 3. If electricity, gas or parking was included in rent enter 5% of line a. c. _____ | |
| 4. Add amounts b and c | d. _____ |
| 5. Subtract amount d from a | e. _____ |
| 6. Enter 20% of amount e as amount subject to relief | _____ |

Under penalties of perjury, I declare that all the above statements and accompanying amounts are, to the best of my knowledge and belief, true, correct, and complete.

_____ / _____

Applicant's Signature Date

will appear on the California ballot in November, 1972. This proposed amendment to the California Constitution is named for its chief sponsor, Philip Watson, the County Assessor of Los Angeles. Although the Watson Initiative is only one of many proposals being discussed in California, the danger that it may be passed by the voters makes us feel it is our duty to give it special attention.

The Amendment attemps to remedy the problems of the property tax through general tax relief. It would place the following limits on all property taxes:

1. Each county: $2.00 per $100 of assessed valuation. (Assessed value is 25% of full market value.)
2. Each city: $2.00 per $100 of assessed valuation.
3. Intra-county taxing agencies: not to exceed in aggregate $0.50 per $100 of assessed valuation.
4. Inter-county taxing agencies: not to exceed in aggregate $0.50 per $100 of assessed valuation.
5. Schools: $2.00 per $100 of assessed valuation for elementary and secondary schools combined.

In short, nowhere would property tax rates exceed $7.00 per $100 of assessed valuation for all purposes other than for the payment of existing debts.

The Watson Amendment commits the State to guaranteeing $825 per pupil for each county. This guarantee of $825 per pupil would yield in total approximately $425 million less than the total amount currently spent in California for elementary and secondary education. Under the Watson Amendment, only the Legislature would be permitted to raise the level of the $825 per pupil guarantee; no local district would be permitted to raise its level of expenditure because the $2.00 limit on the tax rate would not provide enough revenue to support even the $825 guarantee (except in one or two counties), let alone to pay for local add-ons. Conceivably the State could authorize local school districts to levy a local income surtax, perhaps "piggybacked" on the state income tax. However, this would pose serious administrative problems, which will be discussed in a later section.

Table II-3 summarizes the effects of the Watson Amendment on a sample of 48 school districts. The summary assumes that the State would fund the difference between $785 [5] per pupil and the current amount of State categorical aid received by each district. The new tax rate would be $2.00 in unified districts. For purposes of comparison, the table imputes tax rates of $1.35 and $0.65 for elementary and high school districts respectively; these are proportional to the total ADA in elementary and high school districts. The new tax rate also includes the tax rate for a district's existing debt service; this is the only local override permitted under Watson. The following outputs are shown in the table for each of the sample districts:

1. *1970–71 tax rate* is the total district tax rate levied for grades K-12 in 1970–71.
2. *Debt service tax rate* is total district debt service in 1970–71 divided by district modified assessed valuation.
3. *New tax rate* is the debt service tax rate plus 2.00 in unified districts, 1.35 in elementary districts, and 0.65 in high school districts.
4. *New current resources per pupil* is the total amount a district would have at its disposal under Watson for current purposes: $785 plus debt service and federal categorical aid.
5. *1970–71 expenditure per pupil* is total expenditure including net increase in a district's cash balance, but excluding capital outlay from sale of bonds.
6. *Net change in resources* is the difference between new current resources per pupil and 1970–71 expenditure per pupil multiplied by the number of pupils in a district, minus the difference between the new tax rate and the 1970–71 tax rate multiplied by district modified assessed valuation.

The last column of Table II-3 shows most of the sample districts would have received a net fiscal gain. However, resources available per pupil would have been $57 lower in Los Angeles and $702 less in San Francisco than the actual amount spent in 1970–71. For these districts and most of the others, the net fiscal gain is all attributable to the reduction in school tax rates. In short, regardless of a district's own preference regarding the levels of local taxation and expenditure, the Watson Amendment would have cut back both.

Because the $2.00 property tax would not produce sufficient revenues to support an $825 per pupil expenditure, the State would be required to raise approximately $1.2 billion in additional revenues for 1972–73, not including an additional $425 million to maintain school expenditures at present levels. Furthermore, the limits imposed on the property taxes of counties, cities, and other local districts would be inadequate for maintaining present local services, particularly in urban areas. Consequently, if these local services were to be maintained at existing levels, the State would be forced to generate additional revenues to replace eliminated local funding.

[5] The Watson Amendment proposed an expenditure of $825 per ADA for 1971–72. Assuming 5 percent annual inflation, $785 is the equivalent expenditure amount for 1970–71, the year for which necessary data were available.

TABLE II-3

## WATSON AMENDMENT BASED ON ADA

(The $825 Basic Grant Has Been Adjusted to a 1970–71 Value of $785)

| District | 70–71 Tax Rate | Debt Service Tax Rate | New Tax Rate | New Current Res./Pupil | 70–71 Exp./Pupil | Change in Resources ($mil) |
|---|---|---|---|---|---|---|
| Oakland City Unified | 4.7410 | 0.2367 | 2.2367 | 991 | 1226 | 10.09 |
| Lake Tahoe Unified | 3.8570 | 0.9003 | 2.9003 | 1060 | 1272 | 0.11 |
| Blue Lake Union Elementary | 1.8160 | 0.3453 | 1.6953 | 880 | 613 | 0.13 |
| McKinleyville Elementary | 2.5030 | 0.4548 | 1.8048 | 845 | 683 | 0.33 |
| S. Humboldt Unified | 4.4520 | 0.6606 | 2.6606 | 955 | 1136 | 0.12 |
| Greenfield Union Elementary | 2.6144 | 0.5477 | 1.8977 | 837 | 708 | 0.55 |
| Kern County High | 2.3104 | 0.3290 | 0.9790 | 951 | 1148 | 4.55 |
| Lakeside Union Elementary | 1.1497 | 0. | 1.3500 | 798 | 1413 | −0.20 |
| Panama Union Elementary | 3.0887 | 0.6668 | 2.0168 | 906 | 797 | 0.64 |
| Hanford High | 2.1000 | 0.2931 | 0.9431 | 936 | 1044 | 0.60 |
| Lemoore Union High | 1.8885 | 0. | 0.6500 | 821 | 1170 | 0.11 |
| Lakeport Unified | 4.0048 | 0.3811 | 2.3811 | 869 | 914 | 0.21 |
| Antelope Valley High | 2.0630 | 0.2910 | 0.9410 | 940 | 1207 | 1.04 |
| Long Beach Unified | 4.0627 | 0.4412 | 2.4412 | 904 | 1012 | 10.82 |
| Los Angeles Unified | 4.7664 | 0.6119 | 2.6119 | 947 | 1004 | 159.59 |
| Norwalk-La Mirada Unified | 5.5300 | 0.9453 | 2.9453 | 876 | 821 | 7.32 |
| Soledad-Agua Dulce Elementary | 2.7269 | 0.4212 | 1.7712 | 969 | 1194 | 0.09 |
| Sulphur Springs Elementary | 3.5886 | 0.6813 | 2.0313 | 876 | 914 | 0.37 |
| Temple City Unified | 5.8290 | 1.0451 | 3.0451 | 972 | 1072 | 0.98 |
| Whittier City Elementary | 2.8959 | 0.4466 | 1.7966 | 893 | 833 | 1.64 |
| Whittier Union High | 2.6168 | 0.4408 | 1.0908 | 924 | 1076 | 4.18 |
| Chowchilla Union High | 2.2470 | 0.2105 | 0.8905 | 897 | 1247 | 0.14 |
| Tamalpais Union High | 2.2641 | 0.1477 | 0.7977 | 900 | 1536 | 1.19 |
| Weaver Union Elementary | 2.5700 | 0.3422 | 1.6923 | 895 | 842 | 0.17 |
| Alisal Union Elementary | 3.1780 | 0.1651 | 1.5151 | 856 | 690 | 0.65 |
| Carmel Unified | 2.9964 | 0.2614 | 2.2614 | 952 | 1240 | −0.35 |
| Lagunita Elementary | 2.0540 | 0. | 1.3500 | 785 | 1215 | −0.00 |
| Pacific Grove Unified | 5.2340 | 0.7388 | 2.7388 | 891 | 971 | 0.77 |
| Salinas City Elementary | 3.7804 | 0.2883 | 1.6383 | 913 | 870 | 2.81 |
| Anaheim City Elementary | 3.4259 | 0.1608 | 1.5108 | 847 | 891 | 6.78 |
| Fullerton High | 2.5709 | 0.3223 | 0.9723 | 924 | 1285 | 3.40 |
| Santa Ana Unified | 4.2381 | 0.2436 | 2.2436 | 864 | 874 | 7.43 |
| Savanna Elementary | 3.0679 | 0.6038 | 1.9538 | 859 | 724 | 0.68 |
| Seal Beach Elementary | 2.1612 | 0.0696 | 1.4196 | 830 | 1119 | 0.15 |
| Auburn Union Elementary | 2.7737 | 0.3377 | 1.6877 | 870 | 800 | 0.50 |
| Desert Center Unified | 5.2400 | 0.8426 | 2.8426 | 971 | 1350 | 0.15 |
| Perris Elementary | 2.5710 | 0.3950 | 1.7450 | 1045 | 907 | 0.15 |
| Del Paso Heights Elementary | 3.8500 | 0.5183 | 1.8683 | 1133 | 1105 | 0.16 |
| Grant Joint Union High | 2.5720 | 0.4512 | 1.1012 | 895 | 925 | 1.92 |
| Natomas Union Elementary | 1.6390 | 0.1015 | 1.4515 | 888 | 1811 | −0.09 |
| Sacramento City Unified | 5.1730 | 0.8340 | 2.8340 | 909 | 863 | 14.18 |
| San Benito High | 1.7228 | 0.0203 | 0.6703 | 828 | 1285 | 0.20 |
| San Diego City Unified | 4.7016 | 0.5343 | 2.5343 | 892 | 958 | 22.23 |
| San Francisco Unified | 4.0295 | 0.3591 | 2.3591 | 1042 | 1744 | −18.30 |
| Lincoln Unified | 5.3286 | 0.8284 | 2.8284 | 860 | 811 | 1.29 |
| Siskiyou Union High | 2.0600 | 0.5745 | 1.2245 | 1113 | 1350 | 0.08 |
| Keyes Union Elementary | 2.5600 | 0.4423 | 1.7923 | 952 | 735 | 0.14 |
| Modesto City High | 2.7900 | 0.6911 | 1.3411 | 1036 | 1230 | 1.44 |

The Watson Amendment only partially provides for these additional state revenue requirements. The Amendment increases the state sales tax rate from its new 1972 level of 3.75% to 6%, increases the state cigarette tax from $.10 to $.20 per pack, and increases the tax on distilled spirits from $2.00 to $2.50 per gallon. Various changes in business taxes would raise an additional but smaller amount of revenue. Nevertheless, these new revenues would not be sufficient to meet the extra cost of the state's new responsibility for education and other local services. To make matters worse, the Watson Amendment imposes new restrictions on the Legislature's authority to raise public revenues by stipulating that any increase in the rate of the sales or income tax will require a two-thirds vote in both houses of the Legislature. Thus on the one hand the Watson Amendment would impose a large new deficit on the State, and on the other hand would severely restrict the State's ability to raise the revenues needed.

In addition to cutting back the amount of money available for schools and posing a fiscal dilemma for the Legislature, we feel that the Watson Amendment is an inadequate solution to the problem of the property tax itself. The property tax is unpopular for a number of reasons. It is a highly visible tax in California, both because it is paid in large semi-annual installments and because voters are frequently faced

with decisions about tax rates in local elections. Furthermore, the property tax compounds several types of inequity. Assessing practices vary, so that seemingly identical properties may have different assessed values. Another inequity—the one attacked by the *Serrano* decision—arises from unequal amounts of taxable property in different jurisdictions, so that low-wealth districts must pay higher tax rates to obtain any given level of public services. (This inequity would arise from taxing any kind of local wealth, not just property.) Finally, the property tax is inequitable because property value may be a poor measure of a household's ability to pay, as in the case of people living on pensions.

All these sources of dissatisfaction with the property tax have been aggravated in California by increased reliance upon it, especially for public schools. During the 1960's total current expenditures for public education in California increased at an annual rate of approximately 11 percent. Both the rise in average daily attendance and rising costs per student contributed to this increase. During the same period, the state's contribution to school costs fell from approximately 41 to 35 percent of total expenditures, increasing the burden on local property taxes. Meanwhile, the property tax base for schools grew at an annual rate of less than 7 percent, substantially behind the 11 percent growth rate of school expenditures. Therefore, a combination of increasing school costs, heavier reliance on local property taxes, and lagging growth in the property tax base resulted in rising school tax rates during the 1960's.

Neither our proposals nor the Watson Amendment would treat the intrinsic problems of the property tax —high visibility or unsystematic assessment practices. However, our circuit-breaker proposal does attempt to correct for the inaccuracy of property value as a measure of ability to pay by making the amount of property tax relief a function of household income. In contrast, the Watson Initiative would simply reduce property tax rates in a uniform way, thus providing great benefits to railroads, oil companies, utilities, agribusiness, large industrial properties, and wealthy homeowners.

Finally, both the Watson Initiative and our proposed distribution formulas would eliminate the inequities between school districts due to the unequal property tax resources. However, we offer a District Power Equalizing plan that would still allow local voters to control the size of the school budget. The Watson Initiative would abolish this exercise of local autonomy.

### *Alternatives to the Use of Property Values for School Taxation and for Determining Local Wealth*

Our main proposals, to review them once again, are the following: adoption of a non-linear DPE schedule, based upon property assessments and with local contributions toward school support paid, as now, by levies on property values; extension of circuit-breaker tax relief to all low-income households, including renters; expansion in size of compensatory education grants and improvement in their administration; financing of educational improvement and property tax relief by more intensive use of conventional state revenue sources. Alternatively, we could have recommended such measures as these: Substitution of a local income tax for local property taxes; use of average household income in school districts to determine the dollar amount of local contribution necessary to support any given level of expenditure per student under DPE, while specifying that local funds, as now, would be raised by property taxation; introduction of a new kind of State tax, namely, a levy on value added, to supply the money needed for educational improvement and property tax relief. In this section we explain our point of view on (a) local income taxation, (b) use of average household income instead of assessed valuation per student to regulate the flow of grants from the State to school districts, and (c) value-added taxation.

#### *Taxing and Measuring Income by School District*

If the Watson Initiative passes, then a local income tax might be a possible way to preserve local fiscal autonomy without a local property tax. To comply with *Serrano* there might be a power equalizing schedule or some other fiscally neutral plan based on local income tax rates instead of local property tax rates.

Nine states presently have local income taxes.[6] Most of these are really payroll taxes, withheld by employers within the local taxing jurisdiction, and not usually shared with the jurisdiction in which the taxpayer resides. This kind of tax would not be appropriate in a school finance system where the tax rate paid was supposed to be related to the chosen level of expenditure in the schools. To satisfy this criterion, the local tax rate in a school district should be imposed upon people who reside in that district, unless their children attend public school in another district.

[6] Advisory Commission on Intergovernmental Relations, *State-local Finances: Significant Features and Suggested Legislation*, 1972 Edition, Government Printing Office, Washington, D.C., 1972, Table 99.

The simplest procedure for taxing income at the taxpayer's place of residence would be to piggyback a local surtax on the state income tax, as has been done in Maryland. The proceeds from the surtax would be returned to school districts according to the surtax rate in each district. As in a district power equalizing plan based on property taxes (see Chapter IV), the amount returned to a relatively poor school district would have to exceed the actual amount raised from that district. Otherwise the amount of money available for local schools would continue to depend on local ability to pay, which would violate *Serrano*.

The main administrative problem in a piggyback system in which the local surtax rates are allowed to vary would be to identify the school district (or districts, where elementary and high schools are separate) where each taxpayer resides. To solve this problem the State would have to compile a master list of all addresses in the state, showing the school district(s) where the address is located. Then each taxpayer would be required to write his residential address on his income tax return, even if he filed the return from a different address. It would not be sufficient to ask the taxpayer to write the name of his school district, since many taxpayers do not know this information, and also because there would be an incentive to write the name of some other district where the tax rate is lower. For taxpayers subject to withholding, the residential address could supply the withholding schedule that corresponded to the surtax rate in the taxpayer's school district. Clearly, use of local piggyback taxes introduces cumbrous features into the withholding process. An alternative would be to collect the piggyback tax once a year, i.e., at the time of filing the annual State income tax return. This would be feasible if the piggyback tax replaced only a portion of present property tax support of schools, for should these lump-sum surcharges be of the size of present school property tax payments, the State would have regressed substantially from its policy of having tax paid in manageable amounts (through withholding and twice-annual payment of property taxes).

It would also be possible to piggyback a school district surtax on the federal income tax. The proceeds would be returned by IRS to the State, which would distribute them among school districts in some way that was consistent with *Serrano*. Because federal income tax liability is much greater than State in most households this procedure would allow the use of a set of surtax rates which would presumably be regarded as falling within a conventional range. Piggybacking on the federal tax, however, would require Congressional authorization, which may or may not be forthcoming.

If school district income were not actually to be taxed, but merely measured each year, then several procedures are at hand. One method would use existing IRS data on personal income tax returns. These are already aggregated by zip code areas, and might in the future be aggregated by Census enumeration district. Techniques already exist for further combining zip code areas or Census enumeration districts into local school districts. The main drawback is that federal tax returns presently carry only a filing address, which may differ from the taxpayer's place of residence. But except for downtown districts that contain large numbers of tax lawyers and business addresses, a reasonable index of district income could still be constructed by finding the *average* income per return filed from each school district.

Another procedure for constructing an index of district income, as opposed to measuring the true income tax base, would be available if Congress adopts a pending proposal to assign every child a social security number at birth. Then every school could simply record the social security numbers of its children and send the list to the State. At the same time, any parent filing state income tax would be asked to furnish the social security numbers of his or her dependents. The State could then match a child's number with his parent's income, and construct annually a measure of income for each school. This, of course, would exclude the income of all district residents who do not have children in school. But it could be a very useful piece of information for allocating compensatory education funds directly to schools according to the number of low-income pupils, as proposed in Chapter III. The design of any such plan must recognize that some households do not file tax returns. The largest proportion of non-filing households are poor. Possibly a census of low-income neighborhoods might be required.

Some of the general distribution formulas in Chapter IV employ an index of household income by school district, based on the distribution of residential property values. This index has the advantage of using data that are already collected every year. Construction of the index began with the given distribution of single-family homes by assessed value (25% of true value) within each school district. The total assessed value within each value bracket was then multiplied by the estimated average ratio of household income to assessed value for homes in that value bracket. The conversion table, which is shown as Table II-4, was

based in the lower ranges on national FHA data collected for existing single-family homes insured under Section 203 of the National Housing Act. The table was extrapolated by using data obtained from California income tax returns, showing the amount of property tax and total income of married homeowners who itemize deductions.

TABLE II-4

HOUSEHOLD INCOME CORRESPONDING TO ASSESSED VALUE OF SINGLE-FAMILY HOMES

| Assessed Value Bracket | Average Family Income |
|---|---|
| less than $2000 | $8016 |
| 2000- 2499 | 8604 |
| 2500- 2999 | 9300 |
| 3000- 3499 | 10116 |
| 3500- 3999 | 10752 |
| 4000- 4499 | 11676 |
| 4500- 4999 | 12528 |
| 5000- 5499 | 13314 |
| 5500- 5999 | 14150 |
| 6000- 6499 | 15050 |
| 6500- 6999 | 16050 |
| 7000- 7499 | 17150 |
| 7500- 7999 | 18350 |
| 8000- 8499 | 19640 |
| 8500- 8999 | 21050 |
| 9000- 9499 | 22550 |
| 9500- 9999 | 24150 |
| 10000-10499 | 25850 |
| 10500-10999 | 27650 |
| 11000-11499 | 29550 |
| 11500-11999 | 31550 |
| 12000-12499 | 33650 |
| 12500-12999 | 35850 |
| 13000-13499 | 38150 |
| 13500-13999 | 40550 |
| 14000-14499 | 43050 |
| 14500-14999 | 45650 |
| more than 15000 | 50000 |

Sources:
(1) HUD Statistical Yearbook, 1971. Table 223: "Specific Characteristics by Total Acquisition Cost, Existing 1-Family Occupant Purchase Homes, Sec. 203, 1970".
(2) Unpublished table obtained from California Department of Finance: "Married Homeowners: Income-Property Tax-Property Tax Relief Companion", 3/14/72.

To estimate household income in multifamily residences, the first step was to estimate gross rent by dividing the total assessed value by the gross rent multiplier employed by the county assessors. The estimated gross rent was then multiplied by 4.0 to give an estimate of income, on the assumption that gross rent is approximately 25 percent of income. A more refined measure would take account of variation among income classes in the proportions of income spent on rent; this refinement we had to forego for lack of adequate data.

The argument for designing a plan under which household income is the measure of district wealth is probably apparent, but we will state it, nevertheless. Some districts which are rich in property value are populated mainly by poor families. We assume it to be bad policy to undertake to reform education finance in such a way that poor families face increases in their school tax rates; yet a simple response to *Serrano* would almost certainly imply tax rate increases in property rich districts. Use of income to measure local ability to support schools would mitigate rate increases in those industrial or commercial property tax havens that are inhabited mainly by poor families. Unfortunately, this kind of "combination plan" would maintain the benefits of *de facto* tax exemptions for the owners of industrial and commercial estates.

Our conclusions about local income tax and local income measurement are these. (1) Replacement of locally-administered property taxes by locally-administered income taxes is administratively difficult. This fact, taken in conjunction with our earlier statements about the U-shaped incidence of the property tax on household incomes, suggest to us that such substitution of the one tax for the other should be considered seriously only if the Watson initiative is passed. (2) Measurement of household income by school district would be a useful exercise to allow closer targeting of compensatory education funds. This implies, however, that the measurement would show frequency distributions of households by income class and not just average household income by school district. (3) It is possible to design various "combination plans" of state-local education finance, under which income is used as the measure of local ability and property tax is used to raise local school revenues. On the merits, such a plan is superior to property-based DPE *without a circuit breaker*. However, as our simulations in Chapter IV show, property-based DPE *with circuit breaker* offers greater protection to low-income families in large cities and, hence, we prefer it. It also avoids protecting poor families at the price of maintaining *de facto* tax exemption for owners of industrial and commercial holdings.

### *The Value Added Tax*

The value added tax is a levy applied to Gross National Product as it arises through the various stages of the production process. It is applied at the point of sale as a percentage of sale. Thus, at first look, VAT might be called a sales tax, but there are two important differences between VAT and conventional sales taxes: (1) VAT is levied on sales of all or nearly all firms, not just on retailers and (2) VAT paid on purchases from VAT-paying firms prior to the given sales is deductible from the tax liability. These features allow an alternate form of administration, namely, a flat percentage levy on the following business accounts: wages and salaries paid to employees; interest on indebtedness; indirect business taxes;

profits; depreciation of capital assets less purchases or construction of capital assets.

The former method of computing this tax is called the "subtraction method" and the latter, the "addition method."[7] In principle, either method should produce the same tax liability, though the subtraction method is perhaps the easier to use in manufacturing firms, while the addition method is more useful in taxing financial institutions, such as banks.

It is assumed in this discussion that we are considering the "consumption version" of VAT, for it is clearly the most popular of the several different types. Under the consumption version, a full deduction of tax credit in the current taxable period is allowed for the purchase of producer's capital goods, such as plant, machinery, and equipment. Subsequently, no depreciation is allowed on such assets in computing VAT base of the owner. These procedures limit the tax to consumers' goods and services. (Of course, VAT reaches value added through the use of capital assets ultimately but only gradually as erosion of the facilities converts them into gross product.) The consumption type VAT avoids complication of computing depreciation and avoids burdening economic growth to be achieved by capital expansion.

Now we come to an important point. Though the consumption-type VAT is collected in a different manner from the retail sales tax, its incidence is precisely the same. This can be seen by the following simple example:

> "Consider a piece of clothing which retails for $40 and was produced in four states: a farmer who produced the wool, a textile mill which produced the cloth, a dress manufacturer who fashioned the garment and a retailer who brought it to market.
>
> If a 10 percent retail sales tax were imposed on the garment, the customer would pay an additional $4 and the retailer would remit it to the government.

If a 10-per cent value-added tax were imposed, the collection procedure would work as follows:

> Assume that the farmer sold the wool for $10, the mill owner sold the cloth for $20, the dress manufacturer sold the garment for $30 and the retailer sold it for $40.
>
> Each stage of production added $10 of value. Each will therefore pay $1 of tax. This tax, however, is passed on, because each stage in the chain of production is permitted to credit taxes it has paid against those it owes.
>
> Thus the farmer collects $1 in tax from the mill owner. He remits it to the government. Net tax cost to the farmer—zero.
>
> The mill owner collects $2 of tax from the dress manufacturer, credits the $1 he has paid against it and remits $1 to the government. Net tax cost to the mill owner—zero.
>
> The dress manufacturer, in turn, collects $3 of tax from the retailer, deducts his two-dollar credit, and remits $1 to the government. Net tax cost to the dress manufacturer—zero.
>
> Finally, the retailer collects $4 of tax from the consumer, takes his $3 credit and remits $1 to the government. Net tax cost to the retailer—zero.
>
> Just as in the case of the 10-per cent retail sales tax, the government has received $4. And just as in the case of the retail sales tax, the consumer pays it all."[8]

Whether the VAT is more or less regressive than the retail sales tax becomes, hence, strictly a function of the definition of the industrial base to be covered. Retail sales taxes in use in many states exempt most food and housing costs; if these sectors of the economy were included in VAT, then VAT would be more regressive than sales tax. On the other hand, retail sales taxes exclude most activities of service firms, single entrepreneurs in the service sector, financial institutions such as banks, brokerage firms, etc. If service and financial institutions were included in VAT coverage, while food and housing continued to be exempted, then VAT would be less regressive than a retail sales tax.

In recent months, considerable interest has arisen in the United States about introduction of VAT. For the most part, the intent is to pass a VAT at the federal level, but economists have also begun to debate the desirability of VAT use by our state governments.[9] At the national level, one cannot escape a sense of *déjà vu*. In the 1940's and '50's, VAT was advocated as a worthy replacement of the corporate income tax on the grounds of VAT being more neutral as between employment of capital and labor.[10] It was

[7] Clara Sullivan, *The Tax on Value Added*, Columbia University Press, New York, 1965.

[8] Frank V. Fowlkes, "Administration Leans to Value-Added Tax to Help Solve National Fiscal Crisis," *National Journal*, February 5, 1972.

[9] *Ibid.* See also Richard Slitor, "Value-Added Tax: Revenue Productivity and Feasibility," A Report Prepared for the New York State Commission on the Quality, Cost, and Financing of Elementary and Secondary Education, 1971, and Charles E. McClure, Jr., "VAT and Fiscal Federalism," *Proceedings at the 64th Annual Conference on Taxation of the National Tax Association*, 1972, pp. 279–292.

[10] Otto Eckstein, *Public Finance*, Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1964, p. 81. An early advocate of VAT use in the United States was Paul Studenski; see his "Toward a Theory of Business Taxation," *Journal of Political Economy*, October, 1940. Other prominent economists who have supported VAT are Carl Shoup, recently retired from Department of Economics, Columbia University and Dan Throop Smith, now of Stanford University.

also stated that VAT had superiority over corporate profits tax on benefit grounds, in that all businesses, whether profitable or not, require services from government and should make an appropriate contribution toward those costs. Finally, it was pointed out the VAT would improve the balance of payments, because all serious proposals for VAT exempted exports and taxed imports in full. At the present time, the tax is advocated as a replacement for the local property tax —or at least the residential share of the local property tax—on the grounds that VAT is less oppressive of low-income retirees who want to avail themselves of adequate housing. The favorable effects on U.S. businesses of the export-import tax relationship is also in the foreground of the discussion.

Unfortunately for the advocates of VAT, the property tax, described by the executive director of the Administration's Domestic Council as ". . . widely hated, increasingly burdensome, yet still incapable of supporting the nation's schools . . ."—and, hence, the *raison d'être* of VAT, is itself undergoing a favorable reappraisal by leading economists, as we noted earlier.[11]

On the export-import argument, moreover, while this may appeal at the national level, it is a positive deterrent to state use of VAT. Unless a state exempted exports, it could penalize seriously its farmers, mineral industries, and manufacturers. But there is no easy way to exempt exports in interstate trade and clumsy attempts might set off a whole series of beggar-my-neighbor actions by the state governments.

However, VAT is a mainstay of public finance in Europe and Japan (in Europe, it produces over one-third of all public revenue); hence, it deserves serious consideration. What advantages may be claimed for VAT? In listing each, we will offer our appraisal of the worth of the claim.

(1) VAT is economically neutral between capital intensive and labor intensive production, whereas taxes such as the corporate income tax favor labor-intensive production. This is no doubt correct; but whether it is good policy to shift toward a tax that favors (in a relative sense) displacement of labor by capital until such time as we have achieved a more rational distribution of leisure is surely debatable. As compared with other industrial nations, our rate of unemployment is high; furthermore, our unemployment is concentrated among the young, the minorities, the uneducated, and the poor—in short, among those who are least able to defend themselves against the burdens of unemployment.

[11] Charles L. Schultze and others, *op. cit.*

(2) VAT offers partial expression of the benefit principle in that it assumes contributions to government by all businesses, even unprofitable ones. In a sense, this is true, but the statement would be more nearly correct if it read, "contributions made by consumers of products of all businesses, even unprofitable ones." It could thus be said that VAT supports entrenched businesses and bigness while discouraging risk. The property tax may be a more accurate levy on the wealth of non-profitable businesses and thus a more accurate charge for the costs of services supplied to them by government.

(3) VAT spreads collection and compliance pressures over all firms. This places it in contrast to the retail sales tax, where only retailers, generally speaking, are enjoined to collect the tax. This is a fair point, and it is an important argument in countries that suffer from poor compliance with the sales tax. Fortunately, we in the United States enjoy a fairly high level of compliance; hence, the argument loses its force.

(4) VAT has the capacity to impose a justifiable burden on certain financial and service industries not ordinarily covered by conventional retail sales taxes. This is a strong argument in our opinion, but the objective might better be realized by broadening the base of the sales tax than by installing VAT.

(5) VAT is highly productive of revenue. This is true, but the following question then becomes relevant: assuming it possible to obtain additional revenues from existing taxes, is the balance of the whole tax system better served by expanding bases and raising rates on existing taxes or by addition VAT to the tax system?

What is the expected yield of a VAT in California? Nationally, value-added tax base, recognizing exclusions of government purchases of goods and services, gross private investment (including net inventory accumulation and housing construction for owner occupancy), rents, and rental value of owner occupied houses, is estimated as $560 billion in 1972. Whether measured by California's personal income as a share of total personal income in the country or by share of industrial sources of civilian income received by persons for participation in current production, California is 11.0 percent of the national economy. Accordingly, the share of the $560 billion of VAT base attributable to California would be 11 percent as a first approximation. Hence, California VAT base would be in the order of $61.6 billion and a 1 percent VAT rate would raise $616 million annually.

A more detailed analysis takes account of the composition of industrial activities in California. Computations are shown in Table II-5 where personal income magnitudes by industry in California are blown up to values for estimated gross state product by using industrial co-efficients derived from the relation of personal income by industrial sector to gross national product by sectors for the United States. Gross state product in 1970 thus is estimated at $105.1 billion.

Taking account of exemptions (government purchases of goods and services, gross private investment, residential rent, rental value of owner occupied housing, medical care and drugs, private education and research, and religious and welfare activities), we deduct 60.6 percent of gross state product to arrive at a California VAT base of $63.7 billion. According to this second estimate, then, 1 percent of VAT rate would produce $640 million annually. The two estimates are sufficiently close that one may be reasonably confident in saying that a VAT in California that possesses the standard exclusions, except food, would raise somewhere between $600 million and $650 million annually. [12]

Revenue elasticity of state use of VAT is estimated as falling somewhere between revenue elasticity of the real property tax and the state personal income tax, i.e., somewhat in excess of 1.0. The precise value would depend on the kinds of exemptions granted in the base. Administrative costs could be quite low if the tax were handled by existing revenue collection agencies and if returns were made annually—with or without simple interim payments of estimated tax. For a 3 percent VAT, administration costs should be between ½ to 1 percent of resulting revenues. [13]

Our conclusion is that the adoption by California of the value added tax would be inappropriate at this time, and we base this conclusion on these three points: VAT would produce an imbalance in the state's tax system by creating excessive reliance on taxation of consumption goods; VAT is a difficult tax for states to use because of its effects on interstate movements of goods and services; whatever advantages VAT might otherwise offer can better be got by modification of existing state taxes. We take up these three points in turn.

1. *Excessive taxation of retail sales.* We have seen that the burden of VAT is precisely that of a retail sales tax. Even a 3 percent VAT in California could produce such a revenue yield that the effective impost on retail sales could be more than doubled, giving us, in effect, over a 10 percent sales tax immediately. It would be better to raise the yield of the retail sales tax itself, combining, say, a ½ cent increase in rate and a broadening of the base, as well as to obtain a modest increase in personal income tax yield. Were this a tax report instead of an education finance report, we would have offered a more detailed analysis considering *inter alia,* the corporation tax, other business taxes, and the excises on particular commodities and services. Any tax is likely to produce undesirable side effects as well as revenue, and often these effects are not easily quantifiable *ex ante.* Hence, the wise policy is to make judgements on the whole set of taxes on the basis of marginal analysis of the effects of small changes in rates. Adding VAT would doubtless forestall increases in other taxes and would

[12] Excluding government sector, the distribution of estimated gross state product is roughly in accord with the distribution of VAT base in West Virginia, a state that has recently given serious attention to the levy, with the exception, of course, of a disproportionately larger share to mining in that state. See Robert D. Ebel and James A. Papke, "A Closer Look at the Value Added Tax: Propositions and Implications," *Proceedings of the 60th Annual Conference on* Taxation of the National Tax Association, 1967, p. 162.

[13] Richard Slitor, *op. cit.*, p. 42.

TABLE II-5

GROSS NATIONAL PRODUCT AND ESTIMATED GROSS STATE PRODUCT FOR CALIFORNIA, 1970

(All dollar estimates in billions)

| | Gross national product, United States (1) | Personal income from current production, United States (2) | Coefficient (3) (1) ÷ (2) | Personal income from current production, California (4) | Estimated gross state product, California (5) |
|---|---|---|---|---|---|
| All Industries, Total | $973.8 | $632.9 | 1.54 | $67.6 | $104,104 |
| Farms | 28.2 | 19.1 | 1.48 | 1.8 | 2,664 |
| Mining | 16.8 | 6.6 | 2.55 | 0.4 | 1,020 |
| Contract Construction | 45.8 | 38.6 | 1.19 | 3.9 | 4,641 |
| Manufacturing | 253.2 | 176.1 | 1.44 | 16.2 | 23,328 |
| Transportation, Communications, and Public Utilities | 83.0 | 44.9 | 1.85 | 5.0 | 9,250 |
| Wholesale and Retail Trade | 167.3 | 105.5 | 1.59 | 11.9 | 18,921 |
| Finance, Insurance, and Real Estate | 133.7 | 33.2 | 4.03 | 3.9 | 15,717 |
| Services | 114.3 | 96.3 | 1.19 | 12.1 | 14,309 |
| Government and Government Enterprises | 128.8 | 110.7 | 1.16 | 12.1 | 14,033 |
| Forestry, Fisheries, and other | 7.2 | 1.9 | 3.79 | 0.3 | 1,137 |
| Statistical Discrepancy | −4.5 | | | | |
| Total of Derived Gross Product Components for California | | | | | 105,113 |

Source: U.S. Department of Commerce, *Survey of Current Business,* Government Printing Office, Washington, D.C., July and August issues, 1971.

place all the extra burden on consumption levies, in substance.

2. *The Export-Import problem.* For companies that are located wholly in California and owned by Californians, it might seem desirable that the State adopt the practices of national governments in VAT: exempt exports and tax imports. Aside from the fact that this action might stimulate reprisals by other states, it is by no means certain that such a policy would appeal to the large multi-state corporations. Furthermore, there are no cheap physical means to record and police interstate flows of goods and services. Because of the fact that owners are not of a single view about VAT practice on exports and imports and because of the lack of the kind of transactions-recording mechanisms that national boundaries provide, state VAT plans commonly prescribe an apportionment of VAT base to a given state on a formula that recognizes the state's shares of payrolls, property, and sales of the company. VAT becomes a somewhat capricious tax instrument. As one authority has noted, " . . . where the tax liability depends on the interplay of an approximating apportionment formula and the value-added base, it seems that the tax loses some of its distinctive character. Liability depends on apportionment as well as value added."[14] How VAT would really effect the competitive position of the California economy, hence, cannot be clearly seen.

What has recently been proposed is that states adopt value added taxation in a coordinated fashion, i.e., at uniform rates and applied at the geographic site, i.e., the "origin" of productive processes, that create value added.[15] This suggestion is not greatly different from the federal government's adopting VAT and distributing the proceeds under revenue sharing. In any case, such a nationwide approach to VAT seems to lie some years into the future.

3. *Achieving VAT advantages by modification of existing taxes.*

One advantage claimed for VAT is that it imposes a justifiable burden on consumption of services. We propose that the California retail sales tax be extended to service industries. A new tax is not necessary to accomplish this purpose.

An implicit advantage of VAT is that the revenue yield could allow a phasing out of residential property tax, so that the "unfair" burden of property tax be lifted from low-income homeowners and renters who happen to live in high property tax districts. We propose an extended and improved "circuit breaker" on the property tax for this purpose. The relief granted is much more focused and fair than large across-the-board reductions in property tax.

[14] *Ibid.*, p. 29.
[15] McClure, *op. cit.*, p. 287–288.

### Sales and Income Taxation

If VAT is not to provide funds for educational improvement and property tax relief, where may the State obtain the necessary revenues? Our strong preference is to see them obtained from more intensive use of sales and income taxation.

#### *a. Sales Taxation*

As of January 1, 1971, forty-five states—all but Alaska, Delaware, Montana, New Hampshire, and Oregon—utilized a state sales tax. Rates ranged from a low of 2% in Indiana and Oklahoma to a high of 6% in Pennsylvania. The California State rate was 4% during 1970 and generated $1.75 billion in state revenues. The sales tax was thus the largest single producer of state revenues, representing 32% of the *State* total. An additional 1% sales tax was levied jointly by California counties and municipalities, and three Bay Area counties—San Francisco, Alameda, and Contra Costa—levied an extra .5% sales tax in order to finance the completion of the Bay Area Rapid Transit system.

Estimates of the potential revenue that could be realized from the elimination of major sales tax exemptions and exclusions were made by the Board of Equalization and the Department of Finance in October, 1969. The magnitude of potential revenue from broadening the sales tax base appears to be large—over $1 billion for the State government. However, some items now excluded, such as food and medical services, should continue to be excluded, in order to combat regressivity. Other extensions might not produce enough revenue to warrant the increased administrative and compliance costs, e.g., apartment house laundry machines. However, it is a general agreement that broadening the base of the sales tax, if judiciously carried forward, can improve the equity of the levy.

Evidence exists, indeed, to show that including services (but not housing) and insurance in the base would render the tax substantially more progressive.[16]

Our provisional estimate is that a sum in the order of $250 million could be obtained by broadening the sales tax in a nonregressive manner. A one-cent increase in rate should yield an additional $650 million, approximately. It appears almost inevitable that a large share of revenues for educational, a reform will

[16] Memorandum to members of Tax Reform Study Group, California Assembly Committee on Revenue and Taxation, October 16, 1969.

be drawn from the sales tax, simply on account of its productivity.

*b. Personal Income Tax*

Thirty-seven states utilized the personal income tax as of January 1, 1971. Rates ranged from a flat 2 percent in Indiana to a progressive rate structure rising to 14 percent in New York. The effective rate of state personal income taxes on a family of four with adjusted gross income of $7,500 ranged from a low of 0.1 percent of Adjusted Gross Income in California to a high of 3.2 percent in Minnesota. The median was 1.2 percent.[17] The low California effective rate is attributable to high personal exemption allowances (in the form of tax credits) and a high optional standard deduction. Once taxable income is positive, California imposes a progressive rate structure ranging from a low of 1 percent on the first $2,000 of taxable income ($3,000 if filed jointly) to a high of 11 percent in taxable income in excess of $15,000 ($16,500 if filed jointly). The net effect in California is a very progressive income tax compared to those of other states.

In 1970, the personal income tax contributed $1.15 billion to California state revenues, or 21 percent of the *State* total. Thus the personal income tax was the second most productive State tax instrument. Of the three states bordering California, only Nevada did not utilize the personal income tax. Effective tax rates for Oregon and Arizona for a family of four with AGI of $7,500 were 2.4 percent and 1.0 percent respectively—substantially higher than in California (0.1 percent).

The personal income tax has several obvious advantages. First, it is highly responsive to economic growth and therefore strengthens the state's position in meeting increasing demand for revenue. More effectively than any other tax instrument, it permits adjustments for family size, age, handicap, or other characteristics the Legislature desires to exempt. It is intended to result in equal treatment of individuals or households with equal incomes, directly relating tax burden to ability to pay, though various exemptions and allowances mitigate against that equal treatment. It also provides the most effective way of relieving lower income families and individuals from some of the growing burden of state and local taxes.

While we recommend the personal income tax as the second source of revenue to fund the proposals in Chapters III and IV, it is not within the scope of this study to recommend specific changes in the income tax base or in the tax rates. There are an endless number of different methods for making such changes, including narrowing tax brackets, adding new tax brackets, decreasing tax credits, decreasing the standard deduction, substituting tax credits for allowable deductions from income, eliminating some itemized deductions, etc. These are matters requiring detailed study and examination and are ultimately a policy decision for the Legislature.

[17] See Advisory Commission on Intergovernmental Relations, *State-Local Finances and Suggested Legislation*, Washington, D.C., 1971, pp. 71–85.

### Statewide Property Tax for Education

We must deal, finally, with the issue of imposing a statewide property tax. A statewide property tax for education is not a new proposal. It was suggested, for example, in 1965 in a report to the Senate Fact-Finding Committee on Revenue and Taxation, *State and Local Fiscal Relationships in Public Education in California*. The specific proposal was as follows:

"It is suggested that the board of supervisors annually in each county levy and cause to be collected a tax at the rate of $1.10 per hundred dollars of assessed value on all assessable tangible property, including state-assessed property, to be found in the county and that the proceeds of this levy be deposited in a State Teacher Salary Fund. The moneys deposited in the State Teacher Salary Fund would be distributed in each year to the school districts as teacher salary grants, supplemented, as needed for this purpose, by distribution from State School Fund." The recommendation was described as one that ". . . seeks to assure that all districts contribute to school support in accordance with their means."

In 1971, the "Burnette Committee" similarly recommended: "In order to achieve effective equalization of the tax burden among California school districts, the Council recommends the establishment of a statewide property tax rate of $3.75." Yet, the fact that a statewide school property tax has not yet been passed must indicate that the measure does not easily find favor with the Legislature. Distasteful as the idea may be, the purpose of this section of our report is to indicate that a statewide property tax, realistically speaking, is an essential element of resolution of the *Serrano* issue.

Actually, the Consultants to the Senate Select Committee on School District Finance prefer to think of their proposals as incorporating a Minimum Education Rate. The level we propose under the district power equalizing plan is deliberately set quite low—$2.50 per $100 of assessed valuation in unified districts. In 1970–71, fewer than 1 percent of the children in the State attended school in districts lower than this minimum. The manner in which we think

of this as a minimum rate, not a statewide property tax, will be made clear below. However, we recognize that some persons may interpret our proposals as including a statewide school property tax. Hence, we have so labeled this section of our report.

Why is a statewide tax—or a minimum education rate—an essential feature of the resolution of the *Serrano* issue? Let us consider the alternatives. The California Supreme Court stated, "Quality of education shall not be a function of local wealth." The Court measured quality of education in terms of annual expenditures per student. Likewise, the Court interpreted local wealth to mean the taxable capacity of the school district.

One means to satisfy the Court's criterion is full state funding. Implicit in the concept of full state funding is the idea of equal expenditures per student per year, except where differential expenditures can be justified on educational grounds. These differential expenditures are dealt with through categorical grants and are commonly financed from the revenue resources of the State government and of the federal government.

How are the other expenditures, equal per student, to be financed? It is an absurdity to imagine that they could be financed by allowing each school district complete freedom to choose its local school property tax rate, for each district would obviously choose a zero rate. It is almost an equivalent absurdity to imagine that in the short run, general purpose school expenditures could be financed by non-property tax revenue sources in total, for the jump in state income taxes and in state taxes on consumption would be far too severe: about 2.5 billion dollars of additional state revenue would be required. The only practical way, then, that full state funding could be put into effect is through imposition of a statewide property tax that would produce approximately as much as presently is being raised by local district taxes for schools.

The other (really, the only other) alternative state-local relationship to meet the *Serrano* criterion is a district power equalizing plan. If an absolute upper limit is placed on local districts spending per student, in order, say, to protect the state budget, district power equalizing becomes almost synonymous with full state funding, and our previous argument would apply. We have avoided placing such a lid on local district spending by proposing a non-linear district power equalizing schedule. Throughout any district power equalizing schedule, one basic relationship, however, must be maintained if *Serrano* standard is to be satisfied; namely, that equal local tax rates produce equal sums per student per year, regardless of the taxable capacity of given local districts. There is no special problem under a properly designed schedule with districts that choose to spend substantial amounts of money. There is a problem, on the other hand, at the lower end of the schedule. Is there to be no minimum level of expenditure specified? Niggardly districts might then cause harm to the children who live in them.

More important for the process of gaining transition to a district power equalizing arrangement, however, is the possible response of rich districts. Some rich districts might choose to reduce their tax rates—and correspondingly, their expenditures per student—nearly to zero, while allowing, indeed, encouraging, private institutions to take over educational tasks. In rich districts, this might seem preferable to meeting the high tax rates that district power equalizing schedules require to support their customarily lavish programs.

If there is to be, then, a minimum expenditure, obviously *Serrano* requires a corresponding minimum local tax rate. This minimum tax rate is what we call the Minimum Education Rate. Others, of course, may choose to call it a statewide property tax. But whatever it is called, *Serrano* requires its existence unless the school property tax is to be abolished entirely.

The argument so far made would apply in any state. The need for a Minimum Education Rate is reinforced in California by the existence of "basic aid," of which $120 per student per year is a Constitutional provision (an additional $5 per student is added by statute, yielding a total of $125). Districts receiving basic aid are not distinguished by their degree of affluence. Admittedly, all basic aid districts are relatively rich in terms of assessed valuation per student, but some are much richer than others. Each receives the same flat amount per student, and this simply accentuates discrepancies among districts with respect to the relation between local tax rate and dollars obtained per student. A statewide property tax for schools—or a Minimum Education Rate—would surmount the problem posed by basic aid without the nesessity of a Constitutional amendment, because it would support a grant from the State of more than $125 per pupil. All districts, rich and poor alike, would receive the minimum grant, and at the same time would contribute to the support of education in proportion to their means. Basic aid would become irrelevant in determining the fairness of the education finance system.

## CHAPTER III

# SUGGESTIONS FOR EFFECTIVENESS

Strictly speaking, the *Serrano* issue pertains only to the financing of schools. If equitable means for raising and distributing dollars can be identified then the injustices uncovered by the courts will have been redressed. This Report therefore concentrates primarily upon revenue generation and financial aid distribution. However, the problems of providing equality of educational opportunity extend substantially beyond the legal boundaries of "equal protection." It seems to us that a major school finance reform effort simultaneously can provide an opportunity to restructure many of the other unequal, ineffective, and inefficient components of the public school system. As long as energy is being expended to ensure an equitable flow of resources, why not also attempt to redirect those resources in the most productive fashion possible?

Consequently, we suggest a number of reforms which, if implemented, would (1) focus funds on target pupil populations for which they are most critically needed, (2) serve as a foundation for a statewide performance accountability system, and (3) foster more sophisticated research about school effectiveness and permit more sensitive measurement of equal educational opportunity.

The reform recommendations in this chapter have not all been developed with the same degree of effort as is the case with our school finance proposals. This reflects, in part, the shortage of time and resources. It also reflects the absence of precise knowledge regarding many facets of the educational process. Even if sufficient time and money had been available, we would not have been able to validate the utility of many of our effectiveness proposals. Such validity must await the development of a much more thorough understanding of how formal education can and does work.

We wish not to apologize too much, however, because we believe our effectiveness proposals to be sound overall. They are consistent with the best research findings presently in existence, and they are compatible with our practical knowledge of how schools operate.

Before explaining these effectiveness recommendations, it is necessary to digress for a discussion of dollars and educational productivity. There presently exists a substantial misunderstanding regarding the research evidence on school resource effectiveness. Some have interpreted the Coleman Report [1] findings and subsequent analyses of Coleman data [2] to mean that added dollars cannot have any effect on children's school performance. We will be the first to agree that simply providing more money and paying no heed to the way in which it is spent will not guarantee added pupil achievement. Education dollars can be wasted in the same fashion as funds intended for any other activity. Nevertheless, when spent in a thoughtful manner, *school moneys can make a difference*, and in the section which follows we wish to review the research findings on the topic.

### *Do Dollars Make a Difference?*

Until recently the presumption that most people held was that school quality, as with most things, was related to the dollar amount spent. The best schools, in general, were the most costly schools. However, in 1966, the Coleman Report appeared and caused some to doubt such conventional wisdom about schools and dollars. For purposes of this discussion the important Coleman conclusion was:

> The relatively small amount of school-to-school variation in student performance that is not accounted for by differences in family background, indicates the small independent effect of variations in school facilities, curriculum, and staff upon student achievement.

In the period since the appearance of the Coleman Report, many scholars have demonstrated this finding to be unsubstantiated. Nevertheless, the idea still lingers in the heads of some policy makers and laymen that schools do not make a difference in the lives of children and dollar resources do not make a difference in the quality of a school. If acted upon, such ideas could lead to continued disparity in the educational opportunities made available to students in California. Consequently, we take the time here to describe the Coleman Report and explain the research flaws which undermine its findings.

#### *The Coleman Report*

The Coleman Report was authorized in a provision of the 1964 Economic Opportunity Act. The major portion of the data for the Report were obtained

[1] James S. Coleman, et al, *Equality of Educational Opportunity*, U.S. Government Printing Office, Washington, D.C., 1966.

[2] Frederick Mosteller and Daniel P. Moynihan, *On Equality of Educational Opportunity*, Random House, New York, 1971.

from an extensive survey, the Equal Educational Opportunity Survey (EEOS). The EEOS was administered in 1965, and the Report had to be submitted to Congress prior to the end of 1966. Such a tight time schedule undoubtedly accounts for many of the Report's weaknesses. Under similar time constraints, it is not likely that any group of social scientists could have avoided errors. Nevertheless, regardless of the cause, the Coleman Report contained a substantial number of weaknesses. We discuss these weaknesses under four categories: (a) lack of properly specified model of student learning or school operation, (b) an inadequate sample and high non-response rate, (c) inappropriate survey questions and invalid treatment of the data, and (d) inappropriate statistical techniques.

### *Inadequate Conceptual Model*

In order for any social science endeavor to be successful, it must contain a conceptual model or theory which purports to explain the relationships between the variables under study. For the Coleman Report team, this should have involved the construction of one or a set of theories regarding the manner in which schools influence the behavior of students. A complete model would have taken into account facts such as schools attempt to shape students' attitudes as well as their cognitive skills in matters like reading and writing. Also, an adequate theoretical model of schooling would have pointed to the necessity for measuring students' knowledge at two points in time, gaining something of a "before" and "after" measure of student performance. Without such measures, it is impossible to determine where a child entered school in terms of learning and how much school has added to her knowledge. The Coleman Report lacked such a well specified schooling model, consequently, it did not assess the components of schooling sufficiently to enable it to arrive at valid conclusions.

### *Sampling and Response* [2a]

The sampling problem centers primarily upon the lack of response by a sizeable number of schools, teachers, administrators, and students. Instead of obtaining information from 4,000 schools as intended, usable data were gathered for only 3,155. The effective size of the student sample was similarly reduced. Instead of the hoped for 900,000 pupils, adequate responses were obtained for only 569,000. This is a large number, particularly when compared to the 3,000 or 4,000 person samples from which national public opinion surveys frequently operate. Consequently, the Coleman Report reader can be falsely lulled into believing that the large sample size will swamp problems of non-response or sample bias. What must be remembered is that the number of schools involved, not only the number of students, directly affects the validity of the sample. For example, the value attached to the variable "age of school building" is assigned to every pupil in that building. Thus, for many analyses, the effective sample is the number of schools involved, not the number of pupils.

If no systematic bias existed in the way in which schools and their personnel chose not to respond, then the absence of 30 percent of more of the sample schools might still result in an acceptable research design. However, non-response may not have been random. For instance, it is known that school boards and superintendents in several major central cities refused to participate despite sincere promises that no comparisons would be made between school districts and no data would be "leaked." The possibility exists then that big city schools, students, and personnel are underrepresented in the Coleman Report sample. Also, the seemingly large number of sample schools, 3,155, is itself somewhat deceptive when it is realized that these schools must be fitted into sample subsets such as metropolitan/non-metropolitan, geographic region, and grade level. Thus, as seen by at least one set of Report critics, the sample for 12th grade schools in the metropolitan South was based on 78 schools. These authors state that "61 percent of 1,170 high schools included in the original sample could not be included in the analysis. Moreover, only 74 percent of the sample of feeder schools picked for the responding 68[illegible] high schools were included in the final analysis." [3]

In addition to non-response by schools, even when individual students, teachers, and administrators in a school did choose to respond, they did not always do so completely. Non-response was particularly a problem when questions touched upon sensitive areas. For example, Kain and Hanushek state: "In a sample of about 300 elementary schools in the Northeast region . . ., over one third of the principals failed to answer one or more of these questions." [4] The questions to which they refer asked for principals' views regarding racial composition of school faculties. Clearly, such examples of internal non-response to survey items could bias results sharply.

[2a] The material on this point is adapted from James W. Guthrie and Paula S. Morrelli, "The Coleman Report Says . . ." Western Regional School Desegregation Projects, University of California, Riverside, 1971.

[3] John F. Kain and Eric A. Hanushek, "On the Value of Equal Educational Opportunity as a Guide to Public Policy," Discussion Paper #36 for the Program on Regional Urban Economics, Harvard University Press, Cambridge, 1968, p. 14.

[4] *Ibid.*, p. 15.

### *Questions and Survey Procedures*

The third category of technical criticisms centers around the appropriateness of content and form of the survey questions. In this regard, Kain and Hanushek write:

> The absence of questions with any qualitative bite is particularly noticeable. There are many questions which relate to the presence of particular attributes, but few that relate to their quality. [5]

Somewhat more condemning is the statement by Edmund Gordon:

> Schools factors may have been found to be of relatively modest importance for all pupils not because what the schools can do is not crucial but because . . . (the study) did not look at what the schools actually do. [6]

These critics reflect the difficulty of focusing on processes in survey research. While it is possible by questionnaire to obtain information such as a teacher's years of teaching experience, alma mater, and verbal ability, the same cannot be said for items such as "ability to motivate students," the degree to which an instructor provides a strong positive adult model with which his or her pupils can identify, or whether or not the teacher actually matches instruction to the needs and ability level of each pupil. In the absence of information regarding process variables, the Report relied on what researchers label "status variables" such as those exemplified above (age, sex, etc.). These are inadequate measures for what teachers do or should do in classrooms.

In addition to an absence of queries regarding instructional processes, the Report simply obtained inaccurate information from some questions. For example, superintendents were asked to state the average annual dollars spent per pupil in their districts. The analysis done with this item of information results in a finding that dollars have little or no explanatory power in accounting for the differences in student achievement. Critics have reacted unfavorably to the use of expenditure information in the form in which it was gathered by the Report since it represents a districtwide *average* and thereby masks the range in per pupil expenditures which typically occurs within a district. [7]

### *Validity and Completeness*

Another facet of the survey technique which casts doubt upon the Report's results is the self-report nature of the questionnaires. Students were asked questions regarding their parents' education level and occupation, the answers to which it is conceivable they did not know accurately. Teachers were asked questions about themselves and there was a possible temptation to falsify the response. For example, number of years of schooling, salary, or degrees. Moreover, teachers' verbal facility was measured by a self-administered vocabulary test.

### *Statistical Procedures*

The fourth level of technical criticism was first dealt with in print by Samuel S. Bowles and Henry M. Levin in their two articles in the *Journal of Human Resources*. The issue here is that the Report's author employed a form of statistical analysis which is inappropriate if a high degree of intercorrelation among "independent" (input) variables exist. The Coleman Report attempted to explain variance in achievement scores by successively adding different independent variables to a regression analysis. The outcomes of this approach are highly sensitive to the order in which the explanatory variable are entered, whenever the explanatory variables are interrelated. [8]

Coleman Report measures of socioeconomic conditions and school services are highly interrelated and do not meet the criterion of independence. The argument here is that higher quality school services tend to be made available to students from high socioeconomic strata and lower quality school services to students from low socioeconomic strata. If in a regression analysis "independent" variables are in fact highly intercorrelated, whichever variable cluster (socioeconomic status or school services) is first placed in the equation will have exhausted the major portion of whatever variance exists to be explained by the total of the two variable clusters together. The analysis involved in the Coleman Report chose to place *socioeconomic status variables* into the equation first. Not unexpectedly it was "discovered" that this cluster explained substantially more variance than did the *school service cluster*. Had the entry position of the two clusters been reversed, *school service* would have been found to be the major contributor to pupil performance. This is exactly what several other researchers, including Bowles and Levin, did in order to demonstrate the faults in this approach. They, indeed, found the expected results. When entered first, school service variables explained a greater proportion of the variance.

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[5] *Ibid.*, p. 17.

[6] Gordon is quoted in Meyer Weinberg, *Desegregation Research: An Appraisal, Phi Delta Kappan*, Bloomington, 1970, Second edition, p. 292.

[7] Charles E. Hansen, "Central City and Suburbs: A Study of Educational Opportunity," unpublished doctoral dissertation, University of California, Berkeley, 1969.

[8] Samuel S. Bowles and Henry M. Levin, "More on Multicollinearity and the Effectiveness of Schools," *Journal of Human Resources*, Volume III, No. 3, Summer 1968, pp. 393–400.

There are numerous other smaller methodological errors which appear in the Report. For example, students who had transferred from one school to another tended to be matched with the characteristics of their present school, even if they had been there for only a few days. Also, it has been found by subsequent analyses of the EEOS questionnaires that the nonresponse of students to certain questions is not random. We could continue in this vein for some time. However, we think the point regarding the Report's flawed methodology is now clear.

### Contrary Findings

There have been several subsequent analyses of the EEOS data used in the Coleman Report. These studies fall prey to many of the Coleman Report flaws, but because they arrived at opposite conclusions, they are useful to prove our point regarding the invalidity of the Coleman findings. Those contrary analyses which we shall review here are by Hanushek,[9] Bowles,[10] and Levin.[11] We shall primarily discuss their findings regarding the effects of changes in school inputs on student test scores.

Hanushek analyzed the determinants of sixth grade verbal ability scores for a sample of predominantly black and predominantly white northern metropolitan schools. His results provide an interesting contrast to those of the Coleman Report. Three measures of school inputs, teacher verbal scores, experience, and race proved to bear a statistically significant relationship to verbal achievement.[12]

Bowles used a model similar to that employed by Coleman, and his unit of observation was the individual student. His findings confirm those of Hanushek and also indicated that some school inputs other than teacher characteristics are significantly related to student achievement, at least for a sample of twelfth grade black males. For example, the presence of science laboratory facilities, average time spent in guidance activities, and number of days the school is in session, are all significantly related to pupil achievement.

Levin also used a model like Coleman's and utilized observations on sixth grade white students attending 36 schools in a northeastern city. In his reanalysis of EEOS data, he found statistically significant relationships between student achievement and teacher experience and teacher undergraduate institution.

The analyses of EEOS data undertaken after the Coleman Report do not refute the Report's claim that the home is more important than the school in determining student achievement. However, these studies do demonstrate that increasing school inputs, especially improving teacher quality, can improve scholastic achievement of both black and white students. It is obvious that increasing these inputs costs money and that if poor schools had more money and spent it on these inputs, their student achievement would improve. The point is not that these studies provide definite answers, they do not. However, they emphasize the fact that the Coleman Report cannot be relied upon.

### How Much is Enough?

Recently a study titled "How Much is Enough?" was completed by the Education Model Team of the California State Department of Finance.[13] This study is noteworthy here because of its similarity to the Coleman Report. The study employes a model which says student achievement (actually school district averages) is a function of current measures of the home and school environment. They, like other researchers, found the two environments to be closely related. To filter out the effect of the home they developed a two-step procedure, which atttempted to measure the impact of changes in education expenditures on student achievements. However, to the extent to which dollar resources are positively associated with the social and economic level of a school district's pupils, *their procedure underestimates the true effect of expenditures on performance.* A proof of this assertion is attached as Appendix III-A. Essentially, the problem is that in straining the total socioeconomic effect they filter out too much; what they discard includes the effect of socioeconomic variables on school expenditures. Therefore, when finally they measure the effect of expenditures on performance, they have already excluded the effect of that portion of expenditures which can be attributed to student's higher socioeconomic status in a district.

A second major criticism of the Department of Finance report concerns the apparent finding of "diminishing returns" in the relationship between expendi-

[9] Eric A. Hanushek, *The Education of Negroes and Whites*, unpublished Ph.D. dissertation, M.I.T., Cambridge, 1968.

[10] Samuel Bowles, "Towards an Educational Production Function," in W. Lee Hansen (ed.), *Education, Income, and Human Capital*, National Bureau of Economic Research, New York, 1970, pp. 11–60.

[11] Henry M. Levin, "A New Model of School Effectiveness," *Do Teachers Make a Difference?*, U.S. Department of Health, Education, and Welfare, U.S. Government Printing Office, Washington, D.C., 1970, pp 55–78.

[12] The estimated model, however, does not offer any evidence to refute the Report's claim that school facilities and curriculum measures are not related to achievement. Hanushek included those measures in some unreported regressions, but found that the data were of such poor quality that he could not reject the null hypothesis that the coefficients of the variables are equal to zero. The facilities and curriculum data are based on information reported by school principals; this information is believed by Hanushek and others to be very unreliable.

[13] "How Much Is Enough?", State of California Department of Finance, Sacramento, mimeo, 1972.

tures and performance. The diminishing return pattern appears only among districts in which pupil performance is above the norm.

If this finding has any validity, the true implications for policy seem quite different from the conclusions they draw. If expenditures produced diminishing returns in high achieving districts but increasing returns in low achieving districts, then this would seem to be a strong argument for spending large sums of money on compensatory education.

Over and above these statistical and logical problems, the data used in the model are defective in several ways. First, they use only two measures of socioeconomic status: percentage minority and a poverty indicator. The percentage minority includes Orientals, who tend to perform above the norm, in addition to other minorities who tend to perform less well. Therefore, it is not clear that this variable measures the same thing in every district.

Furthermore, the authors themselves admit to certain shortcomings in their data, such as the omission of districts with ADA over 25,000 and the use of data aggregated at the school district level, which hides the important variations between schools in any district. These data limitations further compound the inaccuracy of the results. For all these reasons *it would be a serious mistake to use the numbers in the Department of Finance report as the basis for establishing a new maximum expenditure level.*

#### Opposing Conclusions

In the time since the Coleman Report, several analyses have been conducted which used different sets of data and which tried to compensate for some of the Report's more obvious flaws. Many of these more recent effects arrive at contrary conclusions; that is, the suggest that dollar resources are linked to the school performance of children. To illustrate our point, we note two such studies here.

Hanushek [14] attempted to find the relationship between third grade test scores and school inputs received between grades one and three by children of white, "blue collar" workers and children of white, "white collar" workers. He found statistically significant relationships between reading test scores and teacher verbal scores and recentness of teacher education for the non-manual worker sample and between reading test scores and teacher experience and recentness of teacher education for the manual worker sample. It should be noted, however, that his model included no measures of socioeconomic or racial composition of the peer group and no measures of school facilities or class size.

Another longitudinal study was undertaken by Winkler.[15] He examined the relationships between verbal test scores and school inputs received throughout the school years for samples of black and white eighth grade students in the secondary schools of Richmond, California.

Winkler's study revealed that several teacher characteristics, salary, experience, and quality of undergraduate institutions, are significantly related to student verbal achievement. Winkler also analyzed the effectiveness of school resources over time and tentatively found that, in terms of students' eighth grade verbal scores, incremental changes in teacher quality in the early grades have a greater impact on black students' achievement than white students' achievement, while the opposite is the case as between the races in the later grades.

#### Conclusions

What we have attempted to do in this section is explain the weaknesses in those studies, primarily the Coleman Report, which have been interpreted to mean that dollars do not make a difference in the amount pupils learn. These studies do not warrant rejection of the presumption that school quality is related to resource availability. However, an intense skeptic might inquire as to why we rely on negative evidence rather than putting forth a strong set of positive findings to the effect that added school dollars are linked with significant increments of student achievement. The answer is that the relationships which constitute schooling are remarkably complex and today's research procedures do not yet comprehend this complexity.

On somewhat the opposite side of the ledger, one might ask "at what level do dollars stop making a difference?" Is there not some point at which returns to added expenditures begin to diminish. Realistically speaking, there certainly must be such a point. Nevertheless, no studies now in existence provide us with sufficient information to begin to determine its precise locus. Moreover, wherever such diminishing returns do begin, it is not likely to be at a point at or below the dollar amounts we recommend in Chapter IV of this Report.

### Dollar Differences As They Now Exist

Having reviewed the evidence on the effect of school dollars, we turn now to an analysis of the fashion in

[14] Eric A. Hanushek, "Teacher Characteristics and Gains in Student Archievement: Estimation Using Micro Data," *American Economic Review*, May 1971, pp. 280–288.

[15] Donald R. Winkler, *The Production of Human Capital: A Study of Minority Achievement*, unpublished Ph.D. dissertation, University of California, Berkeley, 1972.

which California presently distributes its financial aid for schools.

It has been a long standing policy of the California Legislature to encourage "unification" of school districts on grounds of efficiency and equity. Hence, it is instructive to consider expenditure differences among *unified districts.* In 1970–71, total expenditures per student per year ranged from $2,687 in Emery to $612 in Parlier a difference of 4.4 times. Teacher salary expenditures per student were $792 and $861 in such well known unified districts as Berkeley and Beverly Hills, respectively, but only $405 in a low-wealth district such as Lynwood. El Segundo spends $6.26 per student on books and nearby El Rancho, a poorer district, spends only about half as much, $3.73. The differences are striking.

Table III-1 places the topic in a somewhat broader context. For a 20 percent random sample of unified school districts, it displays the generally perverse relationship that exists between local school tax rates and total expenditures per student. It is constructed in the following manner. Column (2) shows total school tax rates, 1970–71. Column (3) is a ratio of tax rates in the individual districts to statewide average total school tax rate—$4.784. Column (4) is actual total expenditure per student in the unified districts. Column (5) is "presumptive expenditures per student," derived by multiplying each district's Column (3) ratio

TABLE III-1

EXPENDITURES AND SCHOOL TAX RATES IN A RANDOM SAMPLE OF UNIFIED SCHOOL DISTRICTS, 1970–71

| District (1) | Total school tax rate 1970–71 (2) | Ratio to state average total school property tax rate (3) | Actual total expenditures per student 1970–71 (4) | Presumptive expenditures per student (5) | Discrepancy (4) − (5) (6) | Size of district (apportionment ada) (7) | Modified assessed valuation per ada (8) |
|---|---|---|---|---|---|---|---|
| Alpine | 1.65 | .34 | 1,559 | 295 | + 1,264 | 118 | 56,561 |
| Atascadero | 5.78 | .79 | 778 | 686 | + 92 | 3,053 | 13,249 |
| Bassett | 5.76 | 1.20 | 806 | 1,042 | − 236 | 8,559 | 6,348 |
| Berkeley | 6.98 | 1.46 | 1,620 | 1,267 | + 353 | 15,626 | 17,626 |
| Bonita | 5.35 | 1.12 | 798 | 972 | − 174 | 7,696 | 7,248 |
| Calaveras | 3.10 | .65 | 892 | 564 | + 328 | 2,251 | 30,579 |
| Carmel | 2.99 | .63 | 1,147 | 547 | + 600 | 2,974 | 37,011 |
| Chico | 4.62 | .97 | 751 | 842 | − 96 | 9,524 | 9,949 |
| Coalinga | 3.38 | .71 | 1,240 | 616 | + 624 | 2,408 | 32,483 |
| Corona-Norco | 4.56 | .95 | 667 | 825 | − 158 | 15,625 | 8,502 |
| Davis | 5.61 | 1.17 | 966 | 1,016 | − 50 | 5,275 | 14,033 |
| Desert Sands | 5.02 | 1.05 | 940 | 911 | + 29 | 7,637 | 15,658 |
| El Rancho | 5.91 | 1.24 | 768 | 1,076 | − 308 | 14,609 | 7,500 |
| Esparto | 3.35 | .70 | 924 | 608 | + 316 | 701 | 19,944 |
| Fontana | 5.17 | 1.08 | 831 | 937 | − 106 | 13,040 | 11,522 |
| Garden Grove | 5.07 | 1.06 | 688 | 920 | − 232 | 53,805 | 5,820 |
| Hacienda-La Puente | 5.37 | 1.12 | 747 | 972 | − 225 | 33,303 | 5,628 |
| Imperial | 4.42 | .92 | 741 | 799 | − 58 | 1,604 | 14,924 |
| Surupa | 5.00 | 1.05 | 739 | 911 | − 172 | 9,138 | 7,263 |
| La Canada | 5.55 | 1.16 | 906 | 1,067 | − 101 | 5,008 | 13,954 |
| Las Virgenes | 5.57 | 1.16 | 994 | 1,067 | − 73 | 5,404 | 19,884 |
| Live Oak | 2.49 | .52 | 692 | 451 | − 241 | 1,298 | 12,511 |
| Long Beach | 4.06 | .85 | 898 | 738 | + 160 | 67,373 | 18,172 |
| Lynwood | 4.55 | .95 | 692 | 825 | − 133 | 9,368 | 8,264 |
| Martinez | 5.11 | 1.07 | 1,060 | 929 | + 131 | 4,898 | 17,517 |
| Milpitas | 7.73 | 1.62 | 837 | 1,406 | − 569 | 9,582 | 6,664 |
| Monterey Peninsula | 4.97 | 1.04 | 825 | 903 | − 78 | 19,010 | 6,616 |
| Mountain Empire | 3.74 | .78 | 1,031 | 677 | + 354 | 914 | 15,975 |
| Newark | 5.80 | 1.21 | 746 | 1,050 | − 304 | 9,673 | 6,037 |
| Oakland | 4.74 | .99 | 1,091 | 859 | + 232 | 62,547 | 15,044 |
| Pacific Grove | 5.23 | 1.09 | 857 | 946 | − 89 | 3,729 | 11,861 |
| Palos Verdes Peninsula | 5.56 | 1.16 | 848 | 1,007 | − 159 | 17,921 | 12,261 |
| Patterson | 4.27 | .89 | 868 | 773 | + 95 | 2,312 | 13,799 |
| Plumas | 2.60 | .54 | 1,076 | 469 | + 607 | 2,879 | 30,334 |
| Redlands | 5.33 | 1.11 | 808 | 963 | − 155 | 12,411 | 10,268 |
| River Delta | 2.88 | .60 | 1,153 | 521 | − 632 | 2,942 | 31,836 |
| St. Helena | 3.56 | .74 | 992 | 642 | + 350 | 1,364 | 26,357 |
| San Jose | 5.49 | 1.15 | 991 | 998 | − 7 | 37,141 | 12,391 |
| San Luis Coastal | 4.48 | .94 | 950 | 816 | + 134 | 7,010 | 21,813 |
| Santa Ana | 4.24 | .89 | 812 | 773 | + 39 | 28,360 | 13,318 |
| Shoreline | 4.36 | .91 | 1,266 | 790 | + 476 | 892 | 30,009 |
| South San Francisco | 5.52 | 1.15 | 979 | 1,126 | − 147 | 12,649 | 16,864 |
| Torrance | 4.85 | 1.01 | 781 | 877 | − 96 | 35,930 | 12,899 |
| Vallejo | 5.21 | 1.09 | 858 | 946 | − 88 | 16,297 | 6,336 |
| Washington | 5.94 | 1.24 | 761 | 1,076 | − 315 | 5,704 | 9,183 |
| Willits | 4.96 | 1.04 | 878 | 903 | − 25 | 1,950 | 11,958 |
| Yucaipa | 4.95 | 1.03 | 728 | 894 | − 166 | 4,386 | 10,811 |

Source: California Agency for Research in Education, *California School Districts Financial Analyses*, 1970–71, Burlingame, The Agency, 1971.

by statewide average total expenditure per student in unified districts (1970–71): $868. Column (5) shows expenditures as they would be if there were, contrary to fact, a one-to-one relation between local tax rate and expenditures.

Column (6) is the discrepancy between actual and presumptive expenditures, with "winners" (more expenditure than the tax rate "justifies") being indicated by plus signs and "losers" by negative signs. Columns (7) and (8) provide information about size of district and local wealth.

The relation between local wealth, on the one hand, and being a winner or loser, on the other, is perfectly clear. It appears almost impossible for a district to be a winner if its assessed valuation per student is below $10,000. If a district seeks a moderately high level of expenditure and has a valuation below $13,000 per student, it is unlikely to be a winner.

No one would expect a perfect fit between amount of local tax rate and expenditure per student, but one would expect some poor districts to be winners because, for example, they are likely, on the average, to receive more Title I funds per student than rich districts (as measured by assessed valuation). California's finance system appears clearly to favor high assessed valuation districts. Whenever low income students attend school in low wealth districts, the probability is high that those who need extra help to overcome their initial learning disadvantages will not be receiving it.

### *The Special Problem of Teacher Distribution*

Production function studies place emphasis, as we described in the first section of this chapter, on the characteristics of teachers as a key school variable. That is, on the average, we would expect to see greater change of student achievement and motivation if we are able to attract "higher quality" teachers into a given school than if we were to reduce class size in the conventional manner, add more specialists, etc. Measurable attributes of teachers that are related to performance of students are intelligence of the teacher himself, the length and quality of his training, and his experience (though after, say, 10 years of teaching, additional experience does not seem to be especially important). It is useful to examine the distribution of teachers among the districts of the State.

A study completed in 1968 by James W. Guthrie indicated that the geographic distribution of teaching talent was markedly uneven, with rural districts having the greatest disadvantage. "The difference which separate rural districts from . . . other (types of districts) . . . are not overwhelming on any dimension. However, they are consistent; that is, on almost every dimension, rural districts appear to possess less capable teachers, and the differences are sufficiently large as to have only a slight probability of occurring by chance alone."[16]

Our current analyses of teacher distribution focus on the three components of expenditure per pupil for teachers' salaries: namely, teacher-pupil ratio, salary schedule, and position of teachers on the salary ladder.

Algebraically, in any district or group of districts,

$$T = N \times I \times C$$

where $T$ = total cost of teachers' salaries/total ADA
$N$ = total number of teachers/total ADA
$I$ = the average between the maximum and minimum salary paid according to the district salary schedule, and
$C$ = (total cost of teachers' salaries/total number of teachers)/I
The factor C measures the extent to which salaries actually paid are high or low relative to the overall level of the salary schedule.

What we wanted to understand was how much of the extra expenditure of teachers' salaries in high spending districts was attributable to smaller class sizes, more generous salary schedules, or the presence of teachers with more credentials and seniority. We divided districts of each type (elementary, high school, unified) into quartiles by size and quintiles by amount of expenditure per pupil for teachers' salaries.

Thus unified districts, for example, were partitioned into twenty subsamples. For each subsample we computed the difference between the amount of expenditure per pupil on teachers' salaries and the average amount for all unified districts. We then used the following identity to separate this difference into the amounts of extra expenditure attributable to each of the three components (class size, salary schedule, composition of teachers) individually and in interaction with the others:

$$T - \overline{T} = (N - \overline{N})\frac{\overline{T}}{\overline{N}} + (I - \overline{I})\frac{\overline{T}}{\overline{I}} + (C - \overline{C})\frac{\overline{T}}{\overline{C}} + \text{interaction term.}$$

Here T, N, I, and C represent values for a subsample, and $\overline{T}$, $\overline{N}$, $\overline{I}$, and $\overline{C}$ denote average values for all districts of that type.

[16] James W. Guthrie, et al, "Geographic Distribution of Teaching Talent," in State Committee on Public Education, *Citizens for the Twenty-First Century*, State Board of Education, Sacramento, 1969.

The interaction term is:

$$(N - \overline{N})(I - \overline{I})\frac{\overline{T}}{\overline{NI}} + (N - \overline{N})(C - \overline{C})\frac{T}{\overline{NC}}$$
$$+ (I - \overline{I})(C - \overline{C})\frac{\overline{T}}{\overline{IC}}$$
$$+ (N - \overline{N})(I - \overline{I})(C - \overline{C})\frac{\overline{T}}{\overline{NIC}}$$
$$+ NCI\left(1 - \frac{\overline{T}}{\overline{NIC}}\right).$$

Results are shown in Table III-2. The first column offers figures on the absolute differences in spending on teachers' salaries, measured on a per student basis, as between high and low spending districts. For unified districts, the high spending districts paid $104 per student more for teachers than did the average expenditure unified district and the lowest spending districts paid $73 less than the average district. Assume, as is approximately correct, that students are universally taught in groups of 25. Then, on the average, $4,425 in pay for teaching service separates the groups of students who receive their education in high spending places from low. Such differences exist between districts that are, geographically speaking, right next door to each other, and it is hard to imagine that such differences in expenditures on teaching do not represent differences in quality of service.

This view is reinforced when we examine the components of expenditure variation. Consider the case of secondary school districts. High spending secondary districts had salary schedules that were only slightly above those of average districts, and the largest single cause of teacher pay differential was found in the class size variable. However, 37 percent of the variation was related to composition of staff, thus high spending districts had teachers with greater levels of training and experience than did the average district.

Low spending districts had salary schedules almost equal to that of the average district and concentrated their economies on the hiring of teachers with small amounts of training and experience, this latter set of factors accounted for 76 percent of the difference between pay for teaching service in the low spending high school districts and the average high school district. But we have already noted evidence to the point that the performance of students is especially vulnerable to training and experience of professional staff.

We strongly suspect that there is discrimination in quality of teachers not only among school districts but also among schools within a district, with schools in low income neighborhoods receiving less than their fair share of experienced and well-trained personnel. Further, even within single schools at the junior and senior high level, we suspect that students in "low ability tracks" are also dealt with unfairly in terms of distribution of teachers.

The problem is more serious than simply the present unevenness among students in quality of teaching service they receive. As long as there is some kind of an incentive system at work to draw superior teachers out of low ability tracks in poor neighborhood schools into high ability tracks in rich neighborhood schools, then there exists a disincentive to take the former assignment seriously and to learn how to teach and nurture children from low income households.

TABLE III-2

## COMPONENTS OF VARIATION IN EXPENDITURE PER PUPIL FOR TEACHERS' SALARIES

| | Difference between teacher salary expenditure per pupil in quintile and average for this type of district | Percent of difference due to: | | | |
|---|---|---|---|---|---|
| | | Class size | Level of salary schedule | Composition of teachers by training and seniority | Interaction |
| Unified District: | | | | | |
| highest-spending quintile | $104 | 66% | 20% | 9% | 5% |
| lowest-spending quintile | −73 | 42 | 26 | 37 | −5 |
| Elementary Districts: | | | | | |
| highest-spending quintile | 93 | 50 | 22 | 22 | 6 |
| lowest-spending quintile | −66 | 41 | 30 | 35 | −6 |
| High School Districts: | | | | | |
| highest-spending quintile | 127 | 49 | 8 | 37 | 6 |
| lowest-spending quintile | −145 | 30 | 1 | 76 | −7 |

Teachers serve their time until they accumulate sufficient seniority to transfer to a more favored situation. Since it is frequently assumed that children in poor neighborhoods cannot, or will not, learn much anyway, a teacher does not need to demonstrate he has dealt successfully with disadvantaged students in order to bid for a "better post."

The system need not operate as it does. Positive incentives to work in the poorer sections of a school district could be established, and transfer and promotion could be related to a teacher's success, fairly measured, in working with his or her students. Teachers who were unusually successful in working with low income students and who were restless in their given assignment could be encouraged to accept a transfer to another low income school. Several of our recommendations in this chapter bear upon these points, but we urge as well that the State accept general responsibility to keep itself informed about the

distribution of quality of teachers' services among different groups of students and take positive action to correct imbalances.

### *On Whom Should Added School Dollars Be Spent?*

If spent for the correct services, added resources can be effective in raising student performance. We are left with a question, however, as to the most appropriate target groups for added dollars. Should they be evenly distributed to every child throughout the State or should they be focused on one or several specific pupil populations? Our recommendation is to pursue the latter course. Specifically, we believe that a substantial proportion of all the new funds we recommend in our proposal should be directed to alleviating Calfornia's increasing rate of educational failure.

We believe this to be the best policy for the State for several reasons. First, we would choose this course out of a concern for equity. Typically, low-achieving children come from low-income households where they are deprived of the resources and experiences which will enable them to succeed in school. Moreover, these frequently are children who now attend schools in low wealth, low spending districts. We take the position that the State has an obligation to assist in compensating both for their early deprivation and for the subsequent state-imposed schooling deficits.

A second major reason for advocating a focus on the relief of educational failure is that the costs, both to the humans involved and to the entire State, are too great to permit such failures to persist. Our society now labors under a high degree of personal disillusion, unemployment, and crime. Better schooling cannot single handedly solve all these problems, but it is an essential component of the solution.

Thus, in this section we present justification for focusing upon failure and describe the practical proposals we would like to see the State adopt to alleviate it.

#### *Why Focus Upon Educational Failure?*

For many students, probably even most, California's schools provide an outstanding educational opportunity. Successful students learn to read and work with numbers at an early age, they excel in subjects such as science and history, and they are admitted in large numbers to the nation's finest institutions of higher education. However, not all students succeed; an apparently increasing number of public school pupils do not seem to be mastering the basic content of schooling: reading, language development, spelling, and arithmetic. Failure to grasp subjects such as these inhibits a student's subsequent ability to comprehend higher level materials and thus may subsequently close the door to college or other important vocational choices. Schools are held responsible for meeting many, sometimes even conflicting, objectives with their students. However, unless the objectives of learning these basic skills are achieved, students run the risk of lifelong handicaps. It is for this reason that we assign our highest priority to the alleviation of school failure.

The primary evidence of California's growing learning problem stems from the results of the statewide testing program. Over the past three years, sixth grade scores on standardized tests of reading, language, spelling, and arithmetic have been descending steadily. (See Table III-3.) For example, grade level equivalent scores in reading for the average California sixth grade student have dropped from 6.0 in 1969–70, to 5.8 in 1970–71, to 5.7 in 1971–72. This means that, in 1971–72, the average California child was reading three months below the national norm for his grade level. In language, spelling and arithmetic, the decrease in sixth grade student performance over the last three years is even more severe.

However, it is when we apply our focus to the below average student that the problems of school failure become almost awesome. For the same battery of sixth grade tests, students scoring at the 25th percentile, the beginning point of the lowest quarter of students, were, on the average, one and one-half to two years below the national norm for their grade level. That is to say, these sixth grade children could perform at only a fourth grade level in arithmetic and reading. Of course, 24 percent of all pupils were performing even worse than this.[17]

School failure is not randomly distributed throughout all the school districts in the State. Quite the contrary, it is in and around the largest cities, Los Angeles, San Francisco, Oakland, Long Beach, San Diego, etc., and in a number of school districts located throughout the length of California's great Central Valley that low achievement is most concentrated. As has come to be expected, these also are the areas most characterized by high proportions of low in-

[17] These poor test performances do not occur at the twelfth grade. We cannot readily explain why high school scores should be in keeping with national averages, when elementary scores are substantially below. However, one reasonable explanation is that many of the low achieving students have "dropped out" of the system by the twelfth grade and thus do not depress the average scores.

## TABLE III-3

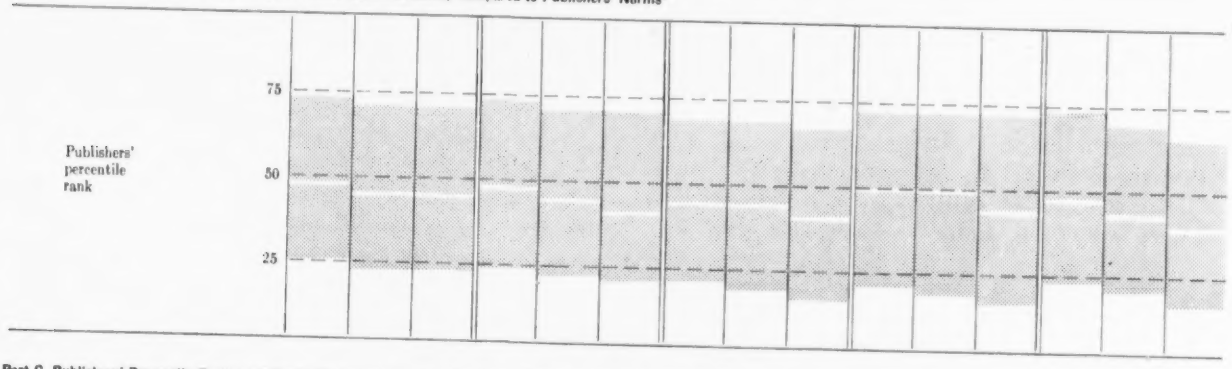
CALIFORNIA STATE DEPARTMENT OF EDUCATION
Office of Program Evaluation

Statewide Standardized Test Results
California Public Schools—1969–70 Through 1971–72
Scholastic Aptitude and Achievement Tests—Grade Six

**Part A. General Information**

| Test | *Lorge-Thorndike Intelligence test* Verbal ability | | | *Comprehensive Tests of Basic Skills, Form Q, Level 2* | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Reading | | | Language | | | Spelling | | | Arithmetic | | | | | |
| Year | 1969–70 | 1970–71 | 1971–72 | 1969–70 | 1970–71 | 1971–72 | 1969–70 | 1970–71 | 1971–72 | 1969–70 | 1970–71 | 1971–72 | 1969–70 | 1970–71 | 1971–72 | | | |
| Number of pupils tested | 327,078 | 322,870 | 338,427 | 328,754 | 333,734 | 341,035 | 327,059 | 331,766 | 338,749 | 327,273 | 332,601 | 339,432 | 326,901 | 331,609 | 339,244 | | | |

**Part B. Interquartile Ranges (25th, 50th, and 75th Percentile Scores) Compared to Publishers' Norms***




**Part C. Publishers' Percentile Ranks and Grade Equivalent Scores of the State Quartile Scores (25th, 50th, and 75th Percentiles)**

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 75th Percentile (State Q3) | | | | | | | | | | | | | | | |
| State raw score | 100.0 | 108.2 | 107.5 | 71.8 | 71.4 | 70.5 | 68.4 | 67.9 | 66.5 | 25.7 | 25.7 | 25.5 | 84.8 | 83.2 | 81.5 |
| Publishers' percentile rank | 74 | 72 | 72 | 74 | 72 | 72 | 68 | 68 | 65 | 73 | 73 | 73 | 74 | 68 | 65 |
| Publishers' grade equivalent | Not applicable | | | 7.6 | 7.4 | 7.4 | 7.2 | 7.2 | 7.0 | 7.5 | 7.5 | 7.5 | 7.3 | 6.9 | 6.8 |
| 50th Percentile (State Q2) | | | | | | | | | | | | | | | |
| State raw score | 98.1 | 97.2 | 96.6 | 61.7 | 61.2 | 59.8 | 58.3 | 57.5 | 55.5 | 22.6 | 22.5 | 21.9 | 74.9 | 72.6 | 69.8 |
| Publishers' percentile rank | 48 | 46 | 46 | 48 | 46 | 44 | 43 | 43 | 39 | 49 | 49 | 42 | 47 | 43 | 38 |
| Publishers' grade equivalent | Not applicable | | | 6.0 | 5.8 | 5.7 | 5.7 | 5.7 | 5.4 | 6.0 | 6.0 | 5.6 | 5.9 | 5.8 | 5.5 |
| 25th Percentile (State Q1) | | | | | | | | | | | | | | | |
| State raw score | 87.9 | 87.4 | 87.0 | 45.7 | 45.3 | 43.7 | 44.3 | 43.2 | 41.0 | 17.6 | 17.3 | 16.4 | 58.9 | 56.1 | 52.9 |
| Publishers' percentile rank | 25 | 23 | 23 | 24 | 23 | 21 | 21 | 19 | 17 | 22 | 19 | 16 | 24 | 21 | 18 |
| Publishers' grade equivalent | Not applicable | | | 4.5 | 4.4 | 4.3 | 4.3 | 4.2 | 4.1 | 4.6 | 4.3 | 4.1 | 4.8 | 4.7 | 4.5 |

* The three broken horizontal lines indicate the publishers' 75th, 50th, and 25th percentiles. The shaded columns represent the middle 50 percent of the test scores of California grade six pupils. The top of each column represents the 75th percentile for the California pupils, the bottom represents the 25th percentile scores, and the break in the middle of the column represents the 50th percentile score. These data are presented in numerical form in Part C of this exhibit.

come families and high degrees of transiency among students.[18]

How is it that school performance can be decreasing in the face of federal government education programs such as ESEA Title I and California's own compensatory efforts? Again, we have no clear answer. However, as we describe in a subsequent section on "Accountability," one of the problems with compensatory education funds is that they seldom amount to the "critical mass" needed to make a difference for a child. Moreover, and perhaps even worse, compensatory education funds do not always reach the target populations for which they are intended. They sometimes "leak" to provide benefits to other students.

### *Why State Involvement?*

We feel that the problem of school failure is a State problem for several reasons. First, legally speaking,

[18] Evidence for the concentration of failure can be found as far back as 1965. (See Charles S. Benson, *et al., State and Local Fiscal Relationships in Public Education in California*, Report of the Senate Fact Finding Committee on Revenue and Taxation, Sacramento, Senate of the State of California, March 1965). Results of the 1968–69 statewide testing program reveal that the pattern of failure still existed at that time. (See *California State Testing Program, 1968–69: An Analysis of Reading Test Scores and Other School Factors*, Sacramento, California State Department of Education, 1970.) Information from 1970 confirms the persistence of the pattern. (See, *California State Testing Program, 1969–70*, Parts I, II, and III, Sacramento: California State Department of Education, 1971.

schooling is a responsibility of the State. The State may choose to delegate the task of operating schools to local districts in order to achieve greater administrative efficiency. Nevertheless, the ultimate responsibility for seeing that local schools respond to the needs of students resides with the State.

However, aside from the State legislature's legal obligation, there exists another clear reason for the State to take an active role in alleviating failure.

Levin,[19] in a study undertaken for the United States Senate analyzed the costs to the nation of failure to attain high school completion among our male population at the most productive period of their lives, age 25 to 34, and compared these costs to the price of providing a high school education for this group. The costs of inadequate education are categorized as (1) foregone government revenues from lower lifetime incomes, (2) welfare expenditures attributable to inadequate education, (3) crime which is attributable to inadequate education, and (4) non-monetary costs of reduced political participation and higher incidence of disease.

The study concluded that each dollar of social investment in assuring high school completion would have generated approximately $6 of national income over the lifetime of this group of men. Furthermore, for the nation as a whole, the government revenues generated by this investment would have exceeded government expenditures by over $30 billion.

In discussing the case for compensatory expenditures, our objective is to improve the quality of education by raising student achievement. However, there is a high correlation between achievement (as measured by test scores) and years of schooling; hence, the points made by Levin are equally persuasive in arguing the case for social investment in failing children by means of compensatory educational expenditures.

Because the recipients may migrate out of state, an individual state could not expect to reap all the benefits from providing an adequate education for the educationally disadvantaged. The evidence, however, indicates that the benefits to the state would still greatly exceed the costs, especially for a state the size of California.

The financing of compensatory education is far too complex to permit one simply to prescribe, "give additional dollars to the educationally needy." One has to provide answers to the following questions: (1) Who are the needy?; (2) How should the additional dollars be allocated and spent? (3) Who should determine what is to be bought with the additional funds? We attempt to answer these questions in the following pages. In discussing the criteria to be used in allocating compensatory education funds, we initially suggest ideal criteria. Later we present an operational formula which disburses funds on the basis of criteria which may not be ideal but for which data presently exist.

### *Definition of Need*

Who are the needy, the educationally disadvantaged? Children of low socioeconomic status enter school embodying less human capital than other children and may continue to experience a deprived home and neighborhood environment throughout their school years. Hence, some argue, those are the students who merit special attention.

Others argue that some children of low socioeconomic status (i.e., whose parents have low income, low education, and low prestige occupations) actually achieve quite well in school, and the money should instead by provided to low achievers, where achievement is measured by standardized test scores. High SES (socioeconomic status) does not necessarily imply educational advantage; indeed, low achievement may reflect an educational disadvantage not captured by the measure of socioeconomic status. Furthermore, it may be the low achievers as a group, not low SES students, who quit school and impose costs on society in the form of welfare, crime, unemployment, etc.

These two arguments can be seen more clearly if we consider the determinants of student achievement. Upon entering school, the level of student achievement is a function of the student's genetic potential and the home environment to which he has been exposed in the pre-school years. To reward low achievers on the basis of first grade test scores will then given some resources to high income students with low genetic potential. To compensate children on the basis of low SES environment will mean giving some resources to students whose high genetic potentials enable them to do well in school despite low SES.

The two bases for allocation of compensatory funds correspond to two different objectives. To grant extra dollars on the basis of low SES is to attempt to equalize student achievement between social classes; given the genetic potential of students, it is an attempt to provide low SES students with as much opportunity to develop their genetic potential as is available to high SES students.

To grant extra dollars on the basis of low achievement is to attempt to equalize achievement among all

[19] Henry M. Levin, "The Costs to the Nation of Inadequate Education," Select Committee on Equal Educational Opportunity, United States Senate, Washington, D.C.: U.S. Government Printing Office, 1972.

students, or at least to bring all students up to some minimum level of achievement on a set of specified dimensions. In other words, it is an attempt to compensate for deficiencies in learning irrespective of the source of those difficulties, genetic potential or pre-school environment.

We propose that both criteria, low SES and low achievement be used to determine the allocation of compensatory education funds. Low SES students deserve equal opportunity with high SES students to develop their genetic potential fully. On the other hand, improving the education of low achieving students may have a very high ratio of benefits to costs to the State. We propose that the compensatory aid be allocated to a specific student as a function of both his socioeconomic status and his scholastic achievement upon entering school.

Measurement problems exist with respect to both SES and achievement. What is the best measure of socioeconomic status or home and neighborhood environment? We could use income as a proxy for SES, but definitions of income vary greatly. Perhaps the most precisely defined measure of income available to the policy maker is "Adjusted Gross Income" (AGI) as reported on state and federal income tax returns. However, because of present tax policies, wealthy citizens sometimes have zero Adjusted Gross Income. We believe the best measure of SES to be a scale which reflects parental education and occupational status as well as income; studies in educational production such as those we reviewed at the beginning of this chapter, have shown all these home environment factors to be important determinants of student achievement.

It is also difficult to measure scholastic achievement. Test scores at grade one may understate educational disadvantage with respect to verbal ability; one notes that the achievement gap between blacks and whites increases over the school years. One reason for the increasing gap may be that tests given at grade one do not measure verbal disadvantages as well as tests given in later grades. However, if tests at later grade levels are used as a criterion for disbursement of funds, they may act as a disincentive to teachers and administrators to improve student achievement. Even the use of grade one test scores might act as a disincentive to schools to offer pre-school educational services.

In spite of the shortcomings, we propose that grade one test scores be used as a criterion for the allocation of compensatory education funds; if the state wishes to provide pre-school educational services to potential low achievers, it can specify that a certain portion of compensatory funds allocated to a district be used for that purpose. Furthermore, we propose that a reassessment of educational need take place at grade nine; that is, grade nine test scores should be the basis for the allocation of compensatory funds among high school students. Since elementary school teachers are not likely to suffer if compensatory funds received by the high school are cut, there should be very little disincentive to improve student performance at the elementary level.

We propose that ideally the State allocate funds in accordance with the distribution of need in each district. In other words, funds would be allocated according to the following formula:

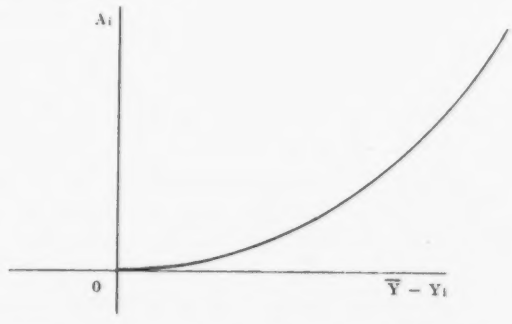
> The amount of aid allocated to a district on behalf of any student would be determined by (i) the difference between the student's SES and the mean for the state and (ii) the difference between his grade one test score and the mean for the state. Furthermore, the larger these differences are, the higher is the amount of aid which is allocated to the student. Funds to the district as a whole would simply be the sum of the allocation for individual students in the district.[20]

Hitherto we have assumed that increments in resources received by needy students have equally high payoffs at all grade levels. Psychologists have argued that this is not likely to be the case. Deutsch[21] contends that early childhood deprivational influences have greater impact in later years and grades than

[20] To some, this formula might be more easily understood if expressed symbolically:

$A_i = f(\overline{Y} - Y_i, \overline{EA} - EA_i)$;
where: $Y$ = mean of SES scale for the state;
$\overline{EA}$ = mean grade one achievement test score in the state;
and,
$\partial A_i/\partial Y_i < 0$ if $Y_i < \overline{Y}$, = 0 otherwise;
$\partial A_i/\partial EA_i < 0$ if $EA_i < \overline{EA}$, = 0 otherwise.

Graphically, this can be represented:




[21] Martin Deutsch, "The Disadvantaged Child and the Learning Process," in H. Passow (ed.), *Education in Depressed Areas*, Columbia University Press, New York, 1963, pp. 163–180.

earlier ones. The policy suggestion which follows from such information is that funds should be focused on those grades where there is the highest marginal product in terms of some measure of output (achievement test score) upon completion of school at, say, grade twelve. The marginal product is likely be highest when the child is undergoing the most rapid mental development, which according to Bloom [22] takes place in the pre-school years and the early grades.

Rapid mental development does not necessarily imply a large marginal product resulting from an increment in school inputs. However, if one group of students receives fewer educational inputs from the home than another group, the principle of diminishing returns suggest that the marginal product of school inputs should be higher for the disadvantaged group. There is a piece of empirical evidence which substantiates this claim. Winkler [23] found for a sample of students in Richmond, California, that blacks, who are of lower SES in general than the whites in the sample, receive more benefit (where the measure of benefit is eighth grade reading scores) from additional school inputs received in the early grades than do whites. The findings also indicate that increasing school inputs (teacher quality) by one unit had the highest marginal product for middle and high SES students (whites) in the later grades while the converse may be true for low SES students (blacks).

In light of psychological theory and empirical evidence, we propose that the size of compensatory funds allocated (and spent) to each child vary inversely with an eligible student's grade level, such that a student will receive more aid at grade one than he does at grade six and more aid at grade six than he receives at grade twelve.

### *How Should Compensatory Funds Be Spent?*

We have been discussing the criteria to be used in allocating compensatory education funds among students and school districts within the state. We have assumed in that discussion that funds can be accurately targeted on students so that each student receives the full benefit of funds allocated to the district on his behalf; we will discuss the realities of this assumption shortly.

A matter equally important as the allocation of funds is what use should be made of them. Aid given on the basis of a student's SES is meant to compensate for the educationally deleterious effects of low SES. Aid given on the basis of student achievement is meant to bring the child up to some minimum achievement level, regardless of whether low achievement is attributable to genetic or environmental limitations. The matter to be investigated here is how these funds should be spent to achieve the objectives of the State.

Studies in educational production have indicated that inputs associated with both home and school environments are important determinants of student achievement. We suggest a natural partition of compensatory education funds along these lines. That portion of funds meant to provide low SES children with equal opportunity to develop their genetic potential should be used to supplement those resources normally provided by the home and neighborhood environment. That portion of funds meant to improve the performance of low achievers should be used to provide special instructional personnel, programs, and facilities within the school for the use of those students. Not only does our suggestion follow logically from the rationale for the two kinds of compensatory funds; it also suggests that it is best to target funds to low SES students through the community and funds to low achieving students through the school.

Several studies have shown that a large proportion of total variance in achievment is accounted for by the home environment. However, at present, schools make almost no effort to improve the home and neighborhood environment of low SES students, many of whom are also low achievers. Furthermore, at present there are federal compensatory education funds which are directed to the schools. For these reasons we suggest that a large proportion of total state compensatory funds be spent in the community; we propose that one-half of total compensatory funds be directed to what we will label as *Community Education Grants.*

It has been shown in several studies [24] that there is a direct relationship between student achievement and parental income, parental education, occupational status, and cultural richness of the home (as indicated by presence of reading material) and an inverse relationship between achievement and number of sib-

[22] Benjamin S. Bloom, *Stability and Change in Human Characteristics*, John Wiley & Sons, New York, 1964.

[23] Winkler, *op. cit.*

[24] See for example, Jesse Burkhead, *Input and Output in Large-City High Schools*, Syracuse University Press, Syracuse, 1967; Eric A. Hanushek, *The Education of Negroes and Whites*, unpublished Ph.D. dissertation, M.I.T., Cambridge, 1968; Henry M. Levin, "The Costs to the Nation of Inadequate Education," Select Committee on Equal Educational Opportunity, U.S. Senate, U.S. Government Printing Office, Washington, D.C., 1972; Lewis J. Perl, *The Role of Educational Investment and Family Background in the Production and Distribution of Educational Services*, unpublished Ph.D. dissertation, University of California, Berkeley, 1970; and Donald R. Winkler, *The Production of Human Capital: A Study of Minority Achievement*, unpublished Ph.D. dissertation, Universtity of California, Berkeley, 1972.

lings. Other studies[25] have shown that poor health and malnutrition adversely affect learning.

These findings suggest several possible policy actions. We foresee the funds being distributed through local school-community agencies in low SES neighborhoods; they in turn could provide essential health care to pre-school and school children, provide basic nutrition in the form of breakfasts, provide quiet places in the neighborhood to study and provide professional assistance to students outside the school. A more ambitious undertaking would be to provide day-care facilities with an emphasis on education and new experiences to pre-school children of low-income parents; such facilities would enable the mother to work or provide more attention to siblings remaining at home. These proposals for educational policy are not independent of other public policies to reduce the welfare load, or reduce unemployment, but the involvement of the education sector in such things as the provision of day-care centers can assure that a major function of those centers is education or preparation of school.

The school effectiveness studies cited above have consistently display a statistically significant relationship between teacher quality (as measured by verbal test scores, prestige of undergraduate school, and salary) and student achievement. Other school inputs do not appear to be as important as teacher quality, but most studies have used aggregated data and imprecise measures of school inputs. Before important questions regarding educational production can be resolved, there is an obvious need for studies to be undertaken at a more micro level. Nevertheless, the findings of these studies do suggest some policies for improving the performance of low achievers. Teachers might be encouraged to take courses to improve their teaching skills with respect to low achievers; the Far West Educational Laboratory in Berkeley has developed a series of mini-courses designed to allow the teacher to teach such skills to himself. Teachers might also be provided with educational games and other teaching aides of the sort which have been developed by other of the federally sponsored educational laboratories or private firms. Also, schools could try to attract high quality teachers to schools with high numbers of low achievers by offering salary bonuses to new teachers or providing better working conditions in those schools.

[25] See for example, Cravioto, Joaquin, and Robles, Beatriz, "Evolution of Adaptive and Motor Behavior during Rehabilitation from Kwashiorkor," *American Journal of Orthopsychiatry*, XXXV (April 1965), pp. 449–464; and Eichenwald, Heinz F., and Fry, Peggy Crooke, "Nutrition and Learning," *Science*, CLXIII (February 14, 1969), pp. 644–648.

Most studies in educational production have not shown a statistically significant relationship between class size and student achievement, but the variation in class size in those studies has been very small. As Deutsch[26] and others have shown, teachers in low SES and predominantly black schools spend a much larger portion of classroom time attempting to maintain a given level of discipline than do teachers in high SES and predominantly white schools. Hence, another policy alternative is to have very small classes for low achieving students, say ten students per teacher. The costs of such a policy might be offset by extensive use of television within the school. By the time children reach school they are conditioned to sit and listen to the television; the same is not true for low SES students with respect to listening to a teacher. The use of television might even be more effective than the current practice of allocating one teacher to every twenty or thirty pupils.

### *An Operational Formula: Performance Improvement and Community Education Grants*

In summary, three criteria should be followed in allocating state funds to school districts for compensatory education:

> Funds should be allocated separately for low achievers and low SES students with funds to the former directed through the school as *Performance Improvement Grants* and funds to the latter directed through both the school and community;
>
> The size of allocation to a given student should be a continuous function of need where need is measured by deviation from state mean for a specific criteria, low achievement or low SES;
>
> The size of allocation to a given student should be a function of grade level with more funds concentrated on the preschool and early school years.

The formula and criteria suggested above for the allocation of compensatory education funds are those that would be desirable to use if the costs of gathering data on the criteria were free, and funds could accurately be targeted on low SES and low achieving students. Ample information exists about the distribution of test scores by district and school; the State Education Department collects such test score data for students in grades 1, 2, 3, 6, and 12. It would probably be too costly in the immediate future, however, to aggregate individual student allocations for each school and district. We propose, instead, that the mean and standard deviation of scores for the entire school be used to determine the allocation of compensatory

[26] Deutsch, *op. cit.*

funds to that school. (This proposal is explained in detail in Appendix III-B.)

Little information is available about the SES of students, either individually or by school or district. We believe better information should be collected by taking a census of parents for each school; from that census, which need not be conducted every year, a scale of SES could be devised and used as a criteria for allocating funds. The SES scale could be dependent on parental income, occupation, education, and employment status.

Until these data become available, however, we must use the same criteria the federal government employs in allocating Title I funds, proportion of families (with children in school) in the district on AFDC (Aid for Families with Dependent Children). There are three major faults with this measure. First, it discriminates against districts having large numbers of poor students with working fathers. Second, the definition of the measure may change greatly over time as welfare laws are revised. Lastly, this proxy prevents us from weighting students according to degree of need because welfare status is a dichotomous variable. However, difficulty in targeting funds on specific students means that there will be spillovers to poor students not on AFDC; hence, the net effect might be an approximation to the criterion of distributing funds according to degree of need. We suggest that those school community organizations which spend the funds related to SES do so in accord with the student weightings given in Figure III-1.

Our measure of district achievement related need is the distribution of grade one test scores for elementary districts. In secondary schools, we use the distribution of grade twelve test scores; it would be preferable to use grade nine test scores, but they are not available at present. We propose that compensatory funds be targeted to the lower 30 percent of students in terms of test scores. Furthermore, a district's allotment per student will be higher for the lower 20 percent of students ($a_1$) than the students between 20 and 30 percent ($a_2$), as shown in Figure III-3. The district should also be required to spend funds in accordance with the student weightings in Figure III-2.

We have not set specific aid per ADA figures for low SES and low achieving students because those figures depend on the amount of money the State allocates to compensatory education. Ideally, however, we think that the parameters in Figures III-1 and III-2 should be assigned the values, K = \$225, t = \$150. If sufficient money were set aside to meet these ideals, a low achieving, low SES student would receive a total of \$1,275 in compensatory aid the first three years of school. This figure is not very different from the compensatory aid Dugan[27] suggests is needed to equate black and white achievement—\$1,300 per year.

We know the mean and standard deviation of grade one (and grade twelve) test scores for each district and the State as a whole. We assume a normal distribution for the State. We can then calculate for the State as a whole which test scores constitute the cutoff points for the lower 20 percent of students ($Z_1$) and the lower 30 percent of students ($Z_2$). Knowing these cutoff points we can then calculate the number of students with scores below $Z_1$ (labeled $a_1$) and the number of students with scores between $Z_1$ and $Z_2$ (labeled $a_2$) for each district.

We make a further assumption that the distribution of grade one test scores is identical at each grade level. Hence, we need only find the proportion of students eligible for compensatory funds for grade 1 (grade 12) and multiply this times district ADA to find the number of eligible students in the elementary (secondary) district. This procedure runs counter to our hope that compensatory funds will narrow the range of student scores in the upper grades at each school level. Nevertheless, it seems to be a necessary feature in order to avoid administrative problems.

Appendix III-B contains a description of the step-by-step procedure used to simulate what compensatory education funds each district would receive under our plan.

[27] Dennis J. Dugan, "The Impact of Parental and Educational Investments upon Student Achievement," *Proceedings of the American Statistical Association* (Social Statistics Section), 1969, pp. 138–148.

Figure III-1

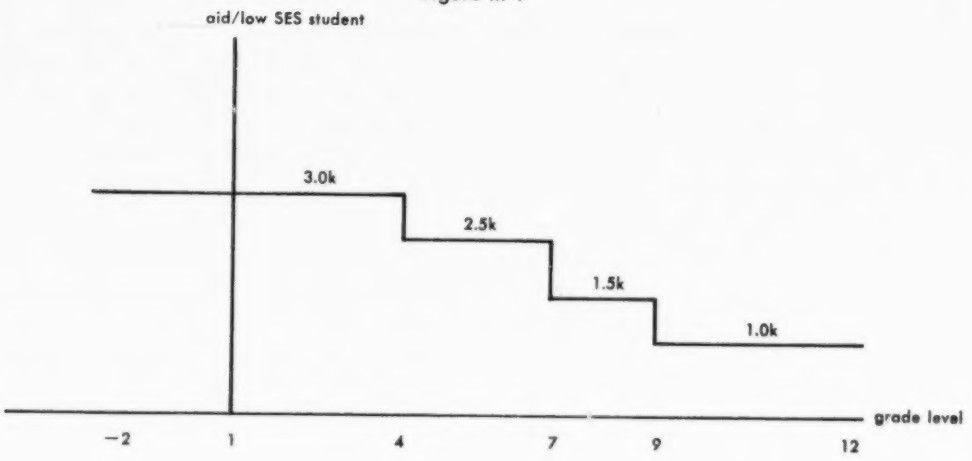



Figure III-2

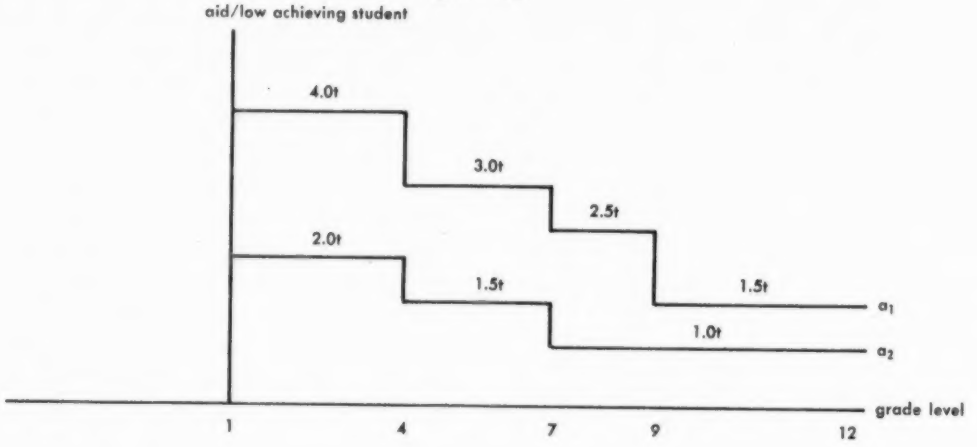
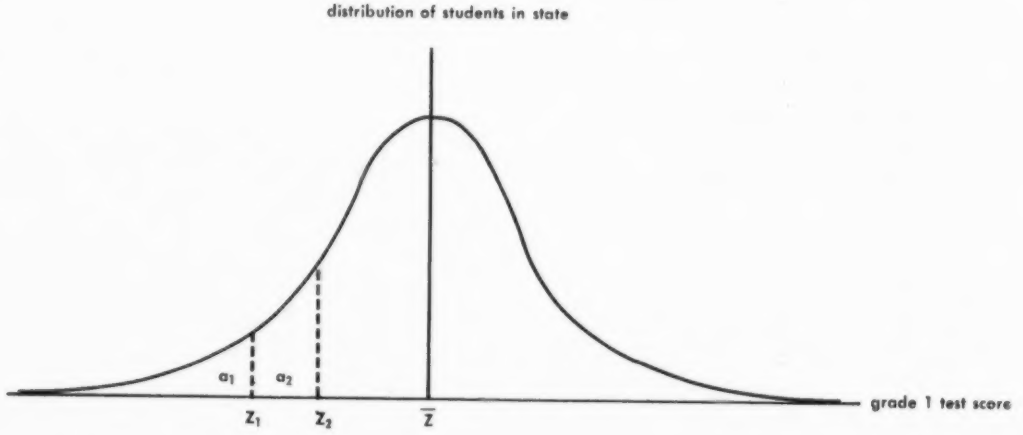



Figure III-3



### *Accountability*

If implemented, our proposed package of finance reforms would provide approximately $800 million in additional resources for California's public schools. We purposely have specified that most of these new funds be used to aid low achieving and low income students. To us, this represents the highest educational priority for the State. Unless schools can begin to be effective for the large number of students who now experience educational failure, we as a society will continue to lose the benefits of their productive participation and they as individuals will run the persistent risk of personal dissatisfaction and economic deprivation.

However, it is evident from past efforts to overcome educational failure that additional resources may be a necessary condition, but they are surely not sufficient by themselves to accomplish the desired objective of raising pupil performance levels. In addition to additional resources, mechanisms are needed to ensure that the new dollars reach the target populations for which they are intended, that they are used to purchase the services which are most appropriate for low achieving and low income students, and that a set of rewards and sanctions is established so that the professional educators involved will have incentives to perform at their best. Our purpose in this section is to describe a set of arrangements which would meet these three conditions. Before explaining these proposals, however, we first wish to examine several characteristics of the public schools which persuade us that an accountability and incentive system is badly needed.

#### *Resource "Leakage"*

In order for the previously described *Performance Improvement Grants* and *Community Education Grants* to have the intended effect of lifting the education level of low achieving and low income students, we must be assured that these new dollars are reaching the children for whom they are intended. We hope not to appear overly cynical about this matter; there is little doubt that the vase majority of educators are well intentioned and would wish for nothing less than that such new programs reach the target population. Nevertheless, experiences with previous compensatory education efforts make it evident that resource "leakage" does occur. Too frequently in the past, funds intended for the benefit of one group of students have filtered through the decision making structure of a school system only to emerge in the form of added services for another group of students.

The most widely publicized examples of misallocation have occurred in connection with ESEA Title I. Federal funds appropriated under this authority are intended to provide compensatory educational services to children from low income families. However, a series of audits in 1968 by the federal government's General Accounting Office revealed that these resources were sometimes used by school districts to substitute for local funds or to purchase services for students who did not meet criteria for inclusion in the program.[28] Subsequent investigations revealed that even when federal funds were focused upon target students they sometimes did not result in the "additional resources" that had been hoped for. What was happening was that target population children frequently attended schools in which they had less local district money spent upon them than did their more fortunate counterparts attending other schools in the district.[29] The federal compensatory funds resulted in disadvantaged students having at least equal amounts, and sometimes slightly more, spent upon them. However, given that they did not start from an equal local resource base, the federal funds did not constitute the $300 or $400 differential as hoped. How do unequal distributions of local dollars come about? The most frequent cause is to be found in policies regarding teacher transfer. Whenever teaching openings occur in school districts, the commonly followed procedure is to permit teachers with the greatest seniority to have first choice in filling them. As a consequence, over time, senior teachers tend to congregate in what they perceive to be the most desirable schools. Generally these happen to be the schools populated by children from higher income and white families.

Such senior teachers not only have the most years of experience, but also they have had the time to accrue added units of academic coursework beyond the Bachelor's degree. These two conditions, added experience and added units, are the primary bases upon which teachers' salaries are fixed. Consequently, the result of seniority transfer policies is that schools populated by children from higher socioeconomic

[28] For added information on this point, see ESEA Title I: "Is it Helping Poor Students?" NAACP Education and Legal Defense Fund, 1968.

[29] This condition received widespread public notice as a result of the Washington, D.C., court case, *Hobson v. Hansen*, in which intra district expenditure differences associated with race were held to be unconstitutional. Similar conditions occur in some California school districts. See, for example, the analysis of elementary school expenditures reported by Frank Levy in "Resource Allocation in the Oakland Public Schools," University of California, Department of Economics, 1971, mimeo.

households tend to be characterized by high paid teachers and schools with poor and minority group children are staffed by relatively inexperienced and low paid teachers.

Differences in teachers' salaries can account for a substantial per pupil expenditure difference. For example, assume two hypothetical classrooms, each with 25 pupils. One is staffed by a senior teacher earning $13,000 annually; the other by a beginning teacher earning $8,000 per year. The salary difference, in this instance, constitutes an expenditure disparity of $200 per pupil.

If such inequities were randomly distributed throughout California's schools, it might be tolerable. However, existing evidence suggest that they discriminate systematically against children from low income and minority group households. In order to avoid such discrimination in the use of local general funds and to prevent the "leakage" of supplementary state and federal funds, *we recommend that the legislature mandate a school-by-school fiscal accounting and auditing system.* Such a system would display, not simply for an entire school district, but also for each school within a district, the amount of money, from all sources, which is being spent. In addition, such an accounting system, should include the pertinent characteristics of students and staff. For example, expenditures should be displayed in conjunction with ethnic survey data, average pupil household income figures, and standardized achievement test scores. Such an information system would begin to ensure that general aid funds were equitably distributed and that special program funds were reaching the student populations for which they were intended. We will have more to say later regarding other uses for such a school-by-school accounting sytem.

### *Fungibility*

The preceding discussion raises a question regarding the general interchangeability or substitution of resources. Whereas we are adamant in our suggestion that compensatory funds should be used for the benefit of the special student populations for which they are intended, we wish to make clear that local district decision making discretion is not impeded with regard to the use of general or noncategorical funds. Local decision makers should feel free to use these resources for any legal purposes they see fit. The only constraint upon such use is that they may not discriminate against children on the basis of race or social status in the allocation of such discretionary funds.

### *Appropriate Program Decisions*

In addition to misallocation problems, compensatory programs for low achieving and low income students sometimes fail because of inappropriate use of resources. The additional funds most frequently are used to raise teacher salaries, lower teacher pupil ratios, and hire teacher aides. Under a few conditions these may be effective actions, e.g., if a district's salary schedule is so far below that of its competitors that it has difficulty amassing a pool of qualified applicants or if it has average class sizes of 50 or more students. However, these are extreme conditions. In most school districts, changes such as these probably are of greater benefit to the educators involved than to the students. To provide existing teachers with salary increases or to lower class size from 25 to 22 pupils per teacher simply is not likely to result in added increments of pupil performance. What it does do is render the teacher's working conditions more comfortable.

In order to obtain the dramatic pupil achievement gains we are hoping for, a host of changes must occur, some in the school and some outside. Parents must be motivated to care about the education of their children, individual diagnoses of learning problems must be made for each child, instructional modes must be rearranged so as to provide a well planned program, filled with the opportunity for positive reinforcement, professional educators must be trained to expect children to perform well, and an information system must be established which will identify the successful school and teacher and provide a set of incentives for high performance among professionals.

In order to ensure that the new funds we propose in the form of Community Education Grants are used to assist students in the most appropriate fashion, and do not simply accrue to higher remuneration and better working conditions for educators, we make the following recommendation. *The legislature should mandate the establishment of a Parent Advisory Council (PAC) for each school entitled to Community Education Grant funds.* These councils should consist of from five to nine members, depending upon the size of a school's pupil population,[30] elected from among parents of enrolled pupils. The PAC would be responsible, in conjunction with the school administration and faculty, for framing a proposal for use of all the Community Education Grant funds to which the school was eligible. To guarantee that the PAC was a full partner in such decision making, no proposal could be considered by State Education Depart-

[30] For example, schools of less than 600 pupils would have a five-member PAC, schools of from 601 to 1,200 a seven-member council, and about 1,200, nine members.

ment authorities unless it bore the signatures of at least a majority of the school's PAC members.

Guidelines for use of Community Education Grant funds should encourage Parent Advisory Councils and school staffs to assess carefully the education related needs of their students and thereafter to search imaginatively for solutions. For instance, if a child suffers from a hearing loss, impaired vision, poor nutrition, or severe emotional disturbances, simply having three less classmates is not likely to make him into a good reader. Thus, Community Education Grants should be used for health services, instructional programs, psychological counseling, supplemental educational services, tutors, field trips, instructional supplies, books, and so on, whatever was decided jointly was most badly needed to enable children from low income households to begin to achieve their educational potential. The role of the State Education Department review panels is to ensure that the program proposals are sound in light of the needs of the students involved and to guarantee that the PAC has been an integral part of the decision making process.

In those instances where a school's Community Education Grant entitlement was less than $10,000, for purposes of establishing a Parent Advisory Council and planning the delivery of supplemental educational services, that school should be grouped with another school, or schools, until the total is $10,000 or more. Parent Advisory Council members should serve staggered terms of either two years or until their children graduate, whichever time period elapsed first. They should be paid $10 per meeting, for a maximum of $200 per year, and reimbursed for all expenses in accord with state regulations. In addition, PAC members should be assured of access to school information necessary to make informed judgments about the best programs for the children in their care.

### *An Incentive System*

School systems operate under a feeble set of performance incentives. For the most part, a school and its faculty are assured a set of clients, students and parents, regardless of whether or not they do a good job of teaching; our compulsory education and mandatory pupil assignment system guarantees this to be so. Similarly within a school, there are few positive rewards or negative sanctions for teachers and administrators. As long as reasonable standards of decorum are maintained in a school, the educators employed in it can expect to be promoted and to receive pay raises with unstinting regularity.

Frequently, those who are surprised by the above described state of affairs suggest that the system should rapidly be rearranged so that teachers and administrators are paid extra for high performance and fired for incompetence. This is too simple. Such a system of rewards assumes agreement on the criteria against which high and low performances should be measured. Moreover, it assumes that, once we know what objectives to assess, that we have a measurement technology which will permit us to make accurate judgments about performance. In fact, at this point in time, neither assumption is valid. We do not have sufficient agreement upon performance criteria and we are still somewhat short of the necessary measurement instruments.

Given these problems, must all performance evaluations in education come to a standstill while efforts are made to reach agreement on the purposes of schools and to develop new kinds of tests? We think not; it should be possible to establish the rudiments of an accountability system to which more sophisticated components can be added when they are developed. We proceed now to describe a basic component of such an accountability or evaluation system. We believe that this system if adopted would provide a basis which could be used, in time, to evaluate the performance of a school's staff; such performance evaluations could then serve as the basis for an incentive system.

### *The School as a Performance Unit*

The basic performance unit of the educational system is the individual school. All testing, auditing, information gathering, and incentive distributions should be organized around schools rather than school districts or individual classrooms. School districts are ordinarily too large or too remote from operations to offer useful information for making policy decisions. The larger the unit, the greater the risk that individual circumstances will be masked. For instance, a district wide figure of 1 teacher for every 25 pupils may disguise the fact that some schools within the district profit from pupil/teacher ratios of 20-1, whereas others may suffer from having only 1 teacher for every 40 students. This is often true for per pupil expenditures as well. On the other hand, the individual classroom appears too confined to serve as a unit for evaluation purposes. In secondary schools, and increasingly in lower grades, a student's schooling is not the responsibility of a single teacher in a single classroom. The teaching "team" for the most part will reside in a school and have responsibility for several classrooms of students.

Thus, it appears that the individual school rather than the district or the classroom, is the most appropriate unit on which to base an assessment system. The basic component of that system should be a *Report of Annual Performance.*

Once a year, each school in a district should be responsible for compiling a Report of Annual Performance. A copy of this report should be sent to the local school district central office and the State Education Department. Moreover, a copy of the report should be published in the local newspaper, sent to the home of each child in the school, and made available to others upon request. The contents of this report should be a combination of standardized information required of all schools by the State, school district mandates, and local school inclusions. The following list illustrates what a typical elementary school report might look like.

**Report of Annual Performance**

*School Information*

Name, location, enrollment, age of building, number of classrooms, number of specialized rooms, school site size, state of repair, amount spent on maintenance in the last year and last decade, library volumes, etc.

*Staff Information*

Number of staff by category, proportion in various license classifications, age, sex, experience levels, etc.

*Student Performance Information*

Intellectual performance: raw scores of students on statewide criterion reference tests in subjects such as reading, mathematics, science, and citizenship. Other performance dimensions: student turnover rate, absenteeism, vandalism, library circulation, etc. Performance of past students at next level of schooling, junior high, high school, college, etc.

*Areas of Strength*

Whatever the school desired to say about some characteristic of itself which it thought was unique or worthy of being known. The intent here is to encourage every school to have one or a few dimensions in which it specializes or desires to become especially known. For example, it might be in reading or math instruction or in the area of art, music, or physical education. Whatever, it should here be described and evaluated by the school. This is the section that would inform parents about the school's theme or style. (This is crucial for the family choice plan to be described later).

*Areas for Improvement*

Here the school would identify whatever it saw as its five weakest points and what it would be striving to strengthen in forthcoming years. This might change in some years, or in some instances it might stay the same as a school mounted a long term project to improve student performance. Whatever, the school must establish objectives in these areas which are stated in terms of student performance and which can be measured.

***Possible Consequences of a School-by-School Information System***

Several categories of benefits could flow from the implementation of the previously outlined accountability and information system. It could serve as the basis for an incentive system, it could lead to substantially more effective forms of research, and it would provide the State with a means of identifying intolerable levels of educational failure. Let us illustrate each of these possibilities in order.

*An Illustrative Incentive System.* Voucher plans are exciting to some educational reformers because they promise to inject features of the market mechanism into the otherwise monopolistic school system. Under a voucher plan, parents and students presumably would benefit from being able to choose the kind of schooling which best suited their tastes. However, voucher plan opponents cite the potential dangers of aid to non-public schools. Between these two points of view, however, is a middle ground which might permit the best of both worlds.

An answer might be to establish a Family Choice Plan in the public sector. The plan could work in the following fashion. In areas where population density permitted, public elementary schools would be aggregated into choice clusters of from three to five schools each. Each school within a cluster would be encouraged to adopt a distinguishing style or theme. For example, a school might emphasize the informal instructional approach of the British Infant Schools, the Montessori Method, the teaching of the dramatic or fine arts, a science oriented curriculum, or the schedules of a traditional school. Parents living within the boundaries of the cluster would be permitted their choice of schools.[31] To a substantial degree, their decision would be based upon the information and performance data available to them through each school's previously described Report of Annual Performance.

Parents, sometime in the early spring, would state their first, second, and third choices. Schools would announce a specified number of openings at each

[31] This is somewhat similar to the experiment to be initiated in the Alum Rock School District beginning in 1972–73.

grade level. If a school were over subscribed, had more applicants than places, a lottery process would be resorted to in order to determine admission.

Careful records should be maintained regarding parent choices. In time, those schools which were consistently over subscribed would become noted for their excellence and appeal; their employees would enjoy the added status that would result. Conversely, these schools which were consistently under subscribed would be subject to negative sanctions, for example, the administrator and part or all of the staff could be replaced.[32]

A Family Choice Plan would require a substantial amount of detailed planning before implementation. Nevertheless, we believe it would motivate a principal to hire and evaluate his staff carefully. Moreover, we believe that it would encourage all the members of a school's staff to produce at their maximum level of capacity.

*More Effective Research.* A second potential advantage arising from the implementation of a school-by-school accounting system is the possibility for identifying successful school programs with substantially greater accuracy than is now the case. By assessing the results of the annual statewide testing program, and by having more accurate records of student and school characteristics, it would be possible to identify those schools which had enjoyed success, at least as measured by standardized tests, beyond that which was expected. Such schools should serve as a focus for intense research examination. What are the characteristics of successful schools and their staffs, what processes do they pursue which are unusual, what instructional materials are employed, etc.? In essence, the school-by-school information system would act as a "research magnetometer" spotting rich lodes of achievement which warranted closer examination. Once having isolated the factors which make for unusual levels of success, presumably, it should be possible to transfer such features to other schools.

*Dealing with Persistent Failure.* In addition to focusing upon success in order to identify instructional techniques worthy of being spread elsewhere, the school-by-school reporting procedures should act as a "Warning System." Wherever levels of educational failure are intolerably low for a persistent period of time, emergency actions should be taken. For example, if for three years running, an elementary school displayed scores on statewide reading achievement tests which were three years or more below grade level, the State Superintendent of Instruction should have the prerogative of supplying the school with a cadre of teachers from a State Teacher Corps. Such instructors would be selected from among the state's master teachers, treated as a unit so as to develop an esprit and habits of cooperation and trained to overcoming educational failure. Upon being sent into a failing school, the task of these teachers would be to overcome low achievement by raising the expectation level, recruiting a new faculty or retraining the existing teachers, developing a community liaison program, and supplying students with intensified instruction.

[32] This proposal is similar to an idea put forth by Anthony Downs, "Competition and Community Schools," in *Community Control of Schools*, H. M. Levin (ed.), the Brookings Institution, Washington, D.C., 1970.

### *Increasing the Effectiveness of Educational Expenditures: Teacher Deployment and Regionalism*

Earlier parts of this chapter have emphasized the overriding importance of directing resources toward students who presently are unable to be full participants in educational programs. We now suggest some changes that may improve the lot of students generally and may offer taxpayers greater yield from their education tax dollars. As stated earlier, the main purpose of this Report is to study the *Serrano* issue, not to do a full scale analysis of efficiency in public schools. The proposals in the remainder of this chapter should therefore be taken as tentative suggestions, any of which would require more careful study before being implemented.

#### *Teacher Deployment*

Teachers in California are among the highest paid in the continental United States. The National Education Association has estimated the average salary of classroom teachers in California in 1971–72 to be $11,440. This is second only to Michigan's average salary of $11,620. Californians should take pride in this fact, for their educational system was subject to greater absolute expansion than that of any other state during the 1950's and 60's. The great increase in pupil load was accepted while at the same time the State has maintained a leading position in remuneration of professional staff.

We feel strongly that superior teachers should receive even greater financial rewards than they do today, but we feel also that the taxpayers of the State deserve increases in productivity in exchange from this point forward. The trick is how to obtain such greater productivity.

What we are concerned with is controlling costs in education. William Baumol, Department of Economics, Princeton University, has indicated that such an objective can not be easily met in service industries and especially in those service industries that exist in

the public sector. Productivity increases are more likely to occur in the private sector than in the public and are more likely to reveal themselves in manufacturing than in other sectors of the economy, private or public. The first conclusion is based on the idea that forces of competition are stronger in the private sector and that such forces stimulate productivity increase. The second assumption is related to the relative ease with which one can substitute physical for human capital in the manufacturing sector.

Baumol states that if productivity growth rises progressively in one sector of the economy relative to its rate of growth elsewhere in the economy, while wages rise steadily in all sectors, then relative costs in the non-progressive sectors will inevitably go up. Further, Baumol indicates that under these conditions, relative costs in the non-progressive sectors will increase cumulatively and without limit. "For while in the progressive sector productivity increases will serve as an offset to rising wages, this offset must be smaller in the non-progressive sectors. Thus, the very progress of the technologically progressive sector inevitably adds to the costs of the technologically unchanging sectors of the economy, unless somehow the labor market in these areas can be sealed off and wages held absolutely constant, a most unlikely possibility." With respect to education, Baumol says "as productivity in the remainder of the economy continues to increase, costs of running the educational organizations will mount correspondingly, so that whatever the magnitude of the funds that they need today, we can be reasonably certain that they will require more tomorrow, and even more on the day after that."[33]

In the past increases on the total costs of education could be soundly defended on the basis of rising student enrollments. Given the fact that budget increases were inevitable, it was possible to include in those increases some extra money to satisfy teachers' demands for higher pay. As Chapter V indicates, we now face a decade of stable or slightly declining enrollments. The traditional justification for rises in educational spending has vanished for the State as a whole. It is unlikely that taxpayers will look with favor upon continual increases in school budgets that cannot be defended in terms of higher productivity. Therefore, the State may feel pressure to adopt policies that would raise the pupil-teacher ratio. Two problems with such an approach are, first, that average class size in California is already high by national standards; second, that cutting back on the hiring of new teachers would interfere with the goal of improving the racial balance of teaching staff. Therefore, instead of simply freezing or cutting back the number of teachers, we would recommend steps such as the following to economize on the time of certificated teachers:

Use adult para-professionals to supplement certificated teachers. We feel an 80/20 percent mix of certificated teachers versus para-professionals would be appropriate. As para-professionals can ordinarily be engaged at half the pay of certificated teachers, the moderating effect of such a step on the pay of instructional personnel is obvious. In many situations, para-professionals have proven themselves to be highly effective in performing classroom duties.

Require all certificated staff except central office persons without educational backgrounds to teach on a part-time basis. We suggest they teach at least 20 percent of their time. Aside from its effect as an economy measure, such a program has two additional advantages—administrative and specialized personnel are kept in touch with conditions in the classroom and with the characteristics and aspirations of the rising generation; by the fact that high status personnel engaged themselves in teaching, the function of teaching itself is raised in status.

To seek to assure that such economy measures do not result in a diminution in quality of education in a state that already has relatively large size of classes, we urge the adoption of a set of low-cost measures to increase the diversity of teaching resources in the schools. First, we recommend that efforts be made to extend the practice of having older students teach younger students. Some ventures of this kind have been highly successful, and both tutors and tutees seem to profit. Successful practice, however, seems to require that tutors receive a certain amount of special instruction for their assignments, in order that they do not ape the practices of the regular teacher, for which they have not the required maturity. In any case, they would then fail to introduce the happy variety in instruction that is so needed.

Secondly, we would urge the State seriously to experiment with an educational television network to provide approximately two hours of instruction per student per day. We do not suggest that all topics in the curriculum should be taught by ETV nor are we convinced that ETV at this time offers absolute superiority over the work of a well trained teacher, but we believe that ETV can permit some curricula tasks to be carried out in larger than ordinary groups of students with no loss of learning effectiveness.

[33] William Baumol, "Macroeconomics of Unbalanced Growth: The Anatomy of Urban Crisis," *American Economic Review*, June, 1967, p. 57.

Thus, ETV can make free some teacher time, in order that teachers work with very small groups of students when the needs of students so indicate. The evidence on ETV is not completely clear as to its cost saving advantages. Nevertheless, we believe the idea worthy of wider experimentation than is now the case.

Thirdly, we urge school districts to make much greater use of part-time personnel. We have in mind housewives who have some special talent or knowledge; lawyers who could instruct students about their legal rights and responsibilities and about the basic ideas of jurisprudence; technicians from fields of unusual interest; craftsmen; artisans and skilled workers; and artists, musicians, and actors. The objective is to reduce the isolation of the school from the more interesting kinds of activities in which adults are engaged. In our opinion, interests of students have shifted sharply from concerns with consumption to curiosity about what people do in their work. We are not pleading for "job orientation" talks. However, any effort to broaden the backgrounds of persons who enter the school to work with students is likely to be rewarding.

### Regional Provision of Educational Services

California has the fourth highest number of operating school districts in the country. Over 1,100 districts in the State are responsible for public elementary and secondary schools services. Efforts to reduce the number in recent years have not been successful. Small school districts, though they may have their advantages, are universally afflicted by two problems: high cost of specialized services and inability to offer a proper range of choice in courses to junior and senior high school students (admittedly, the second problem is simply a special instance of the first). These difficulties can be overcome by regional provision of services.

We are aware that county education authorities in California now provide services to local school districts and that it is the smaller local districts that are most likely to avail themselves of these services. However, we are informed that the quality and range of activities vary widely from one county authority to the next. Furthermore, we believe that, in general, not enough use is made of this intermediate level of government. Finally, we are encouraged by the fact that some county authorities, such as Los Angeles, function in an outstanding fashion.

We suggest, then, that the State undertake a major policy to upgrade and extend county school services. The effort might be in two parts.

1. *Realizing Economies of Scale in Mandated Services.* Services such as student transport, food services, purchasing, and building operation and maintenance can ordinarily be provided for schools more economically by regional authorities than by school districts. We would hold that such support services should be made a mandatory responsibility of county authorities. In the case of transport, assumption of the service by the county opens the way to coordinate school and public transportation systems which may be desirable in itself. Next, we feel that all diagnostic services and all high cost treatment of handicapped children should be made a mandatory responsibility of the regional authorities.

2. *Providing More Options for Students.* It is commonly observed that contemporary junior and senior high school students are more mature in their intellectual interests and in their recreational pursuits than were students a decade or two ago. It is almost impossible to provide specialized, high quality courses to serve this greater maturity in any but the very largest districts. A particular problem is that academically advanced students may have taken all of the courses in a given subject that their high school offers a year or more before they see themselves as ready to enter a university. In some cases, these students can actually attend a college or university on a part time basis, but this is a cumbersome arrangement and budgetary pressures in higher education are restricting those opportunities in any case.

The range of interests to be served is very great. Some students might like to attend courses in Oriental music while others would like to study computer design. Some might be keen on marine biology, while others sought anthropology or eastern religion. Yet others might wish to gain an early start on some form of specialized vocational training. The problem is how to serve such interests at reasonable cost.

How then to surmount the cost problem, for most districts cannot provide a sufficient number of students to take highly specialized courses within reasonable terms of cost—not regularly, anyway? A specialized course, that is, might be cost feasible if twenty students are enrolled and cost prohibitive if only five are enrolled. The answer, we believe, is to be found in the regular provi 'o· of specialized, optional courses by county educat . offices. The courses might be given in afternoons, on weekends, or, if released time were available, during the regular school day. A "Spring Catalogue" might be issued, similar to college catalogues, from which students might indicate their preferences. Undersubscribed courses, naturally, could be cancelled. It should be the aim of a county superintendent to develop an appealing list and to

see his optional enrollments expand. The physical location could be so arranged to minimize students' travel time, using physical facilities of local district schools as well as county facilities. We repeat that regional operations should, in the main, be subject to full state funding. One place to start in this approach would be for the State fully to fund the existing Regional Occupational Centers.

APPENDIX III-A

## PROOF THAT THE EDUCATION MODEL TEAM'S PROCEDURE UNDERESTIMATES THE TRUE EFFECT OF SCHOOL SPENDING ON PERFORMANCE

School performance is a function of both expenditure and socioeconomic status. But expenditure per pupil in a school district itself depends on the socioeconomic composition of the district. Therefore the true model may be written as follows:

(1) $P = (S\ Z)\begin{pmatrix} b \\ c \end{pmatrix} + v.$

(2) $S = Za + u.$

$n$ = the number of school districts.
$k$ = the number of socioeconomic characteristics.
$P$ = an nxl vector of performance scores.
$S$ = an nxl vector of school expenditure per pupil.
$Z$ = an nxk matrix of socioeconomic variables.
$b$ = a scalar coefficient measuring the true effect of S on P.
$c$ = a kxl vector of coefficients measuring the true effect of Z on P.
$a$ = a kxl vector of coefficients measuring the true effect of Z on S.
$u, v$ = nxl vectors of random disturbances, with mean zero.

To find the true effect of expenditures on performance, it would be necessary to estimate b. Since equations (1) and (2) constitute a recursive model, either equation could be estimated by ordinary least squares. However, the Education Model Team uses a different procedure, which will be shown to yield a biased estimate. They begin by regressing P on Z alone.

(3) $P = Zq + r.$

$q$ = the kxl vector of estimated coefficients from this regression.
$r$ = the nxl vector of observed residuals from the regression.

Estimation by ordinary least squares gives

(4) $q = (Z'Z)^{-1}Z'P.$

Their next step is to regress the residual r on S. By this procedure they hope to estimate the true effect of S on P. The regression gives

(5) $r = Sm + w.$

$m$ = the estimated scalar coefficient.
$w$ = the residual.

Estimation by ordinary least squares gives

(6) $m = (S'S)^{-1}S'r.$

Substituting for r and q from equations (3) and (4) gives

(7) $m = (S'S)^{-1}S'(P - Z(Z'Z)^{-1}Z'P).$

Substituting for P from equation (1) gives

(8) $m = [(S'S)^{-1}S' - (S'S)^{-1}S'Z(Z'Z)^{-1}Z'](S\ Z)\begin{pmatrix} b \\ c \end{pmatrix} + [(S'S)^{-1}S' - (S'S)^{-1}S'Z(Z'Z)^{-1}Z']v.$

m is an unbiased estimate of the true effect of school spending on performance if and only if the expected value $E(m) = b$.

Since $E(v) = 0$, taking the expected value of equation (8) gives

(9) $E(m) = E\left\{[(S'S)^{-1}S' - (S'S)^{-1}S'Z(Z'Z)^{-1}Z](S\ Z)\begin{pmatrix} b \\ c \end{pmatrix}\right\}.$

This simplifies to

(10) $E(m) = E\{b - (S'S)^{-1}S'Z(Z'Z)^{-1}Z'Sb\}.$

Since b is nonstochastic,

(11) $E(m) = bE\{1 - (S'S)^{-1}S'Z(Z'Z)^{-1}Z'S\}.$

This can be simplified by substituting
$S'Z = a'Z'Z + u'Z$
and $Z'S = Z'Za + Z'u.$
Thus, since S'S is a scalar,

(12) $E(m) = bE\left\{1 - \frac{a'Z'Za + a'Z'u + u'Za + u'Z(Z'Z)^{-1}Z'u}{S'S}\right\}.$

But $E(u) = E(u') = 0$, and Z and a are nonstochastic.

Therefore

(13) $E(m) = b\left(1 - \frac{a'Z'Za}{S'S}\right).$

Since a'Z'Za and S'S are both sums of squares, they are both positive. Thus

(14) $E(m) < b.$

This completes the proof that m is a biased estimate of b. That is, the procedure used by the Education Model Team will *underestimate* the true effect of school spending on performance.

It is interesting to note from equation (2) that Za is the component of S which can be explained by Z. The ratio $\frac{a'Z'Za}{S'S}$ in equation (13) is therefore the true proportion of the variance in expenditure per pupil that

is due to socioeconomic factors. In short, the coefficient m will understate the true effect of expenditure on performance precisely to the extent that expenditure really depends on socioeconomic status.

Finally, it should be noted that this proof does not rest on the assumption that the true model has two equations. Even if equation (1) by itself were the true model, so that S was considered to be exogenous, then E(m) would still be less than b. Specifically,

(15) $E(m) = b(1 - r_{zs}^2)$,

where $r_{zs}$ is the simple correlation coefficient between S and Z.

APPENDIX III-B

## COMPENSATORY EDUCATION SIMULATION

The following is a step by step procedure explaining the manner in which calculations for compensatory education funds were made for this report. For our purposes, $500 million in State funds was assumed to be available. Arbitrarily, half this amount is to be used for compensatory education based on low achievement and half on low SES.

The allocation based on SES is explained first. For each district we have a poverty index (PI) which is actually the Federal Title I Program entitlement per pupil for that district. Community education grants (CEG's) were distributed based upon this index as follows:

(1) Obtain the state total of the Title I entitlement ($\Sigma_i PI_i \times ADA_i$)
(2) Find the ratio K = 250 million divided by the state total in (1).
(3) Each district then receives a CEG per pupil equal to K times Title I entitlement per pupil.

Allocations based on test scores use grade 1 tests as a proxy for grades K-8 tests and grade 12 tests as a proxy for 9–12 (or 7–12) tests. Students whose test score is below the 20th percentile (statewide) were weighted heavily and those who fell between the 20th and 30th percentile were weighted less heavily (one-half of those above). Additional funds were accorded those districts having very high concentrations of underachievers.

We first determined the statewide 20th and 30th percentile scores for each test. Let $\bar{x}$, $s^2$ be the state mean and variance, and $x_i$, $s_i^2$ be those for district i. Then:

$$\bar{x} = \sum_i n_i x_i / n_i$$

where $n_i$ is the district ADA (a relative count of those who took the exam), and

$$s^2 = \frac{\sum_i (n_i - 1) s_i^2}{\sum_i (n_i - 1)}$$

Assuming a normal distribution of test scores, the test score at the 20th percentile is $\bar{x} - .84s = Z_1$ and that at the 30th percentile is $\bar{x} - .52s = Z_2$.

For each district, we must now determine the percentage of students with scores below $Z_1$ and with scores between $Z_1$ and $Z_2$. To do this, we again assume a normal distribution of scores for the district, and use a "table lookup" computer subroutine.

Districts having 30% of its students with scores below $Z_1$ will receive 50% additional money for each such student in excess of 30%. Also, districts having over 15% of their students with scores between $Z_1$ and $Z_2$ will receive 50% additional money for each student in excess of 15%.

Let $P_{1_e}$ and $P_{2_e}$ be the proportion of elementary students with tests below $Z_1$ and $Z_2$. Similarly define $P_{1_h}$ and $P_{2_h}$.

Let $E_{1_e} = \max [P_{1_e} - .3, 0]$,
$E_{2_e} = \max [P_{2_e} - .15, 0]$, etc.

We will use the grade weightings suggested in the text of the paper. For each district let

$ADA_e$ = K-6 ADA,
$ADA_j$ = 7-8 ADA,
$ADA_h$ = 9-12 ADA,

and let M = allocation per weighted student. Then a district will receive:

$$M^x \; [(P_{1_e} + .5E_{1_e}) \times (21/6)\, ADA_e + 2.5\, ADA_j) + (P_{2_e} + .5E_{2_e}) \times (10.5/6)\, ADA_e + 1.0\, ADA_j) + (P_{1_h} + .5E_{1_h}) \times (2.5\, ADA_j + 1.5\, ADA_h) + (P_{2_h} + .5E_{2_h}) \times (ADA_j + ADA_h)]$$

Finding the sum for each district, we solved for M so that $250 million was allocated in this program.

APPENDIX III-C

## "WINNERS AND LOSERS"

One of the most important questions which should be asked before any major changes are made in the method or level of school finance is, "What will be the probable effects upon districts which will gain or lose relatively large sums of money within a very short period of time?" Due to the shortness of available time, we were unable to do a thorough study of this question, but we feel that through a series of methods we have been able to obtain a rather interesting and valuable picture of some of the possible outcomes.

Our first step was to find districts which had been subject to substantial revenue changes in the past. Numerous districts were easily found. Whether due to A.B. 80 (1966) which required that all property to be assessed at 25% of full value or due to the Williamson Act (The California Land Conservation Act of 1965) and the resultant property tax reductions on prime agricultural land, is not known but we surmise that the combination effects of both contributed, as well as special circumstances in particular districts.

Our second technique was to choose the five highest and five lowest per pupil expenditure districts in the nine Bay Area counties and send a questionnaire to key people in each district. The five highest per pupil expenditure districts and their expenditures were:

1. Emery ..... $2,447.76
2. Berkeley ..... $1,532.71
3. San Francisco ..... $1,413.26
4. Palo Alto ..... $1,401.07
5. La Honda-Pescadero ..... $1,389.16

The five lowest per pupil expenditure districts were:

1. Vacaville ..... $672.80
2. Fairfield-Suisun ..... $674.81
3. Newark ..... $718.92
4. Fremont ..... $719.26
5. San Lorenzo ..... $756.15

The questionnaire consisted of a number of questions and also a chart upon which each administrator was to detail the effects of changing expenditures. Those in high expenditure districts were asked to estimate the effects of $200 and $600 decreases, respectively, while those in low expenditure districts were to chart the projected effects of $200 and $600 increases. Our findings in these categories were most significant, as we shall shortly explain.

First, however, we will look at the districts which have suffered similar losses or gained significant amounts within a short period of time. In the following charts (II-C-1 and III-C-2) we have compiled a list of school districts which had a net gain in expenditure per pupil from the school year 1967–68 to the school year 1968–69, and another list of districts which registered net losses in expenditure per pupil from 1968–69 to the school year 1969–70. We have attempted to digest this material to uncover which specific aspects of a district's expenditures will profit most significantly by an increase and which items will bear the burden when the district takes a net decrease in expenditure per pupil. We were looking for definite direction but encountered only inclinations, and mild ones at that.

Considering any one school district by itself is virtually meaningless. In a given year the amount spent for any specific category may vary sharply. Transportation may register enormous proportional increases by a one time capital outlay for a fleet of buses. Likewise, another category such as maintenance may show just as dramatic decreases because in the year prior three new pickup trucks were purchased.

To alleviate somewhat this variability we have taken the sums of each of the categories for one year and have matched those figures with each of the corresponding categories for the subsequent year. It is hoped that this averaging method will smooth out some of the erratic responses. These are approximate calculations, but they are of some interest.

When a school district as a whole loses money, all categories suffer to some extent, but labor costs, administration and instruction, manage to hold the line a little tighter and register milder cuts. Individual cuts in maintenance and transportation may be from 33% to 80% in losing years while labor, in the large, more statistically reliable districts, was cut a maximum of 15% from one year to the next.

Our calculations of districts that gained in expenditure per pupil are subject to even greater variation since the four districts that returned itemizations had relatively low A.D.A. Nevertheless, there is a mild trend of some interest. Again, districts which recorded overall gains in expenditure per pupil likewise regis-

tered proportional gains in each of the itemized categories. However, it would be much more difficult to show an advantage of labor over material operation as we noted in the districts which decreases their expenditure per pupil. Certainly labor profited greatly, noting sharp increases, but so did operations and transportation.

In quick digest, it would seem that in the lean years salary increases will be milder if at all, and the district may decide to go another year or two with an antiquated school bus. In better times salaries may climb sharply but these gains may be shared with overdue capital outlays such as a new bus.

The second half of our study uncovered several important and surprising facts. Probably the most interesting and diverse responses came from the five unified districts with the highest expenditures per capita. From the first glance at these returns, it looked as though the effects would be quite different in each one. Subsequent interviews in these districts revealed that our initial reactions were correct.

One surprising, and very important, response was received from the LaHonda-Pescadero Unified School District in San Mateo County. The response from their superintendent revealed that, despite their high per pupil expenditures, theirs is a relatively poor district due to their geography and demography. Following is a brief description supplied by the superintendent of the district and its particular situation:

> The LaHonda-Pescadero Unified School District differs from the surrounding districts in many ways. Although our educational program is somewhat more limited in scope than our neighboring districts we still have high per pupil costs . . .
>
> Physically, we are located on the rural isolated coast of San Mateo County with a total area of about 200 square miles—yet we have just less than 500 students in a K–12 system. These students attend three schools (K–8 in LaHonda, a K–8 in Pescadero and 9–12 in Pescadero). Most of our bus runs are such that we go into a canyon and retrace the route coming out since there are few through roads. Some students ride the bus for at least two hours daily. Although the two elementary schools are only 18 miles apart it takes 30 minutes to drive between schools in an automobile and this is over some of the best roads in our district. We transport over 80% of the students . . .
>
> Briefly our program is expensive because of the necessity to operate three small schools in our isolated area; poor roads, and long bus runs; low population density; and high graduation requirements.
>
> The community supports our program with a $6.00 + tax rate. State supports only amount to 16% of the budget.

The superintendent's comments are borne out by a glance at LaHonda-Pescadero's present budget (See Chart III-C-4) and a comparison of its expenditures with those recommended by the State Department of Education (see Chart II-C-3). That budget reveals that the LaHonda-Pescadero district now approaches the SEO "Program Model" only in one percentage category—instructional salaries. In all other categories except one, LaHonda-Pescadero falls from 25 to 100% below SED model recommendations. It is that one category—transportation—which seems to play a decisive role in the expenditure distribution of the remaining funds and any reduction in the budget of this district would come out of the instructional and other non-transportation categories because of the absolute necessity of this expenditure.

Another high-expenditure study district was Palo Alto. Our general observation about this district's present budget is that its expenditures are slanted toward a relatively high percentage of money budgeted for instructional salaries, very low percentages of money for instructional materials, and slightly less than average expenditures in most other categories. We were unable to determine the relative changes in these expenditures because our respondents within the district only furnished us with trends rather than dollar amounts (see Chart II-C-5) as a result of a $200 per pupil loss and asserted that no response was possible to our second question because of complete inability to operate the district with a $600 per pupil loss.

Another district similar to Palo Alto was Berkeley. As with Palo Alto, the Berkeley Unified School District revealed a slightly higher than average percentage of money for instructional salaries and less than average percentages for instructional material. In other categories, Berkeley's present budget seemed to approximate the SED model (see Chart III-C-6). Judging from the figures submitted, the various budget categories would not experience any significant shift; however, administrators of the Berkeley Unified School District insist that their district would be severely affected and drastically limited in its ability to maintain the present quality of its program were such budget cuts to occur. They contend that the level of funding is the only variable which separates Berkeley from other districts.

The fourth high expenditure district had a quite different reaction to our questionnaire (see Chart II-C-7). In fact, the response from Emery was so nonchalant that we decided to investigate further. As we did so, we found that Emery High School has one of the most elegant physical plants in the State. Its closets are well stocked with audio-visual materials, its teacher-student ratio is 11:1, and the visitor's imagination is set reeling at the thought of all the potential that is present. However, surveying further and questioning several persons familiar with the district, it becomes all too obvious that despite its wealth, Emery is far from reaching its potential as a model district. To understand the reasons behind Emery's failure however, we must examine the community of Emeryville itself.

Emeryville is a small town situated in Alameda County between Berkeley and Oakland. Although its unified school district tax rate is much less than the rate in either of the two cities, its per pupil expenditure is more than 1½ times as great as Berkeley's and almost three times as great as Oakland's. The cause of such discrepancy is the low population combined with a great number of industrial plants and therefore high assessed valuation per pupil.

The community situation and the concentration of industrial properties are so unique that our usual tools for evaluating the effectiveness of the program and the effect of the decrease of revenues were useless.

A situation very much in contrast to the above four districts was found when we survey the low expenditure districts which stand to gain as a result of *Serrano*. Although we were only able to elicit responses from two of the five lowest per pupil expenditure districts, the similarity of those two was so striking that we venture to make a rather surprising prediction on the basis of these returns. Many contend that the preponderance of money added to a district's budget goes to teachers' salaries. From our extraordinarily limited sample of two districts we suspect that low spending districts may become more "in-balance" when they have an average level of dollar resources than when they are sorely deficient. Our examples of this are Vacaville and San Lorenzo.

Vacaville's basic expenditure this year was $697. When queried regarding the allocation of an additional $200, 95% or $191 was allotted to current expenses yielding a per capita increase of 22.5%. (See Chart III-C-8). Simultaneously, teacher salaries increases only 16.4% while instructional material expenditures jumped 65.5% and plant maintenance soared to more than twice its previous amount. When $600 was added to the current budget, the total allotted for current costs was $410 or 67%, yielding a 59% increase for current expenditures. Salary cost per pupil increased 43%, while salaries as a percentage of the total decreased by 8%.

As Vacaville approached, and then surpassed the State average in estimated expenditures, its categorical figures came more into line with the SED program model for percentage of expenditures devoted to instruction. Its most severe deviations from those percentages occurred in administration and plant operation costs (3.6% and 5.62% respectively, compared with SED averages of 5.45% and 10.5% respectively). Its most severe over expenditure in non-instructional categories was in plant maintenance (5.88, rather than the SED recommended 4.95%) which is reasonable considering the severe cutbacks in maintenance in Vacaville within the past few years.

Once again, a similar pattern emerged in San Lorenzo, whose present expenditure is $780 per pupil (See Chart III-C-9). With the addition of $200 to the budget, 98% or $196 was allotted to current expenditures, yielding an overall revenue increase of 25.2%. Once again teacher salaries increased less rapidly, showing a gain of 22.5%, and except for plant operation whose percentage of the total decreased, all categories rose to proportions more closely linked to the SED model program than their present expenditures.

Calculation of the $600 increase likewise showed that with an overall revenue increase of 65% over present expenditures, teachers received a 41.5% addition. Furthermore, a 395% increase in instructional material brought the instructional salary level to within .5% of the SED recommendations and instructional materials to within 3% of the State average. As in Vacaville, only maintenance continued to show a marked discrepancy from SED figures, again due to the fact that maintenance has currently been "almost eliminated."

In conclusion, we find that there are more similarities in poor districts' reactions to expenditure changes, possibly because the reasons for low expenditures, i.e., low assessed or low tax rate, are the only two possible. High expenditure districts, however, seem to be the result of factors other than high assessed valuation or high tax rate. Other reasons include community values systems (presumably at work in Berkeley and Palo Alto) and physical layout of the district (as in LaHonda-Pescadero). Within reasonable limits, therefore, these (high expenditure) districts would seem to benefit through a system of district power equalizing which allowed each to take account of its particular circumstances.

## CHART III-C-1

## DISTRICTS WITH INCREASE IN PER-PUPIL EXPENDITURES

| Name of district | Administration | Salary | Materials | Health | Plant operation | Plant maintenance | Fixed charges | Transportation | Total spent per pupil | Dollars gained | Percent gained |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Upper Mattole (1967–1968) | $31.60 | $589 | $51.50 | $2.00 | $141 | $63.80 | $67.00 | $100 | $1230 | $670 | 54.5 |
| (1968–1969) | 16.00 | 1120 | 29.20 | 0 | 50 | 4.00 | 115.80 | 566 | 1900 | | |
| Maple Creek (1967–1968) | 96.00 | 575 | 39.50 | 4.00 | 245 | 62.50 | 90.00 | 1.00 | 1100 | $750 | 63 |
| (1968–1969) | 177.00 | 723 | 127.00 | 1.10 | 496 | 206.00 | 123.00 | 0 | 1850 | | |
| Georgeson (1967–1968) | 21.80 | 790 | 50.00 | 0 | 142 | 89.00 | 34.50 | 0 | 1130 | $1190 | 105 |
| (1968–1969) | 29.00 | 1760 | 80.00 | 2.00 | 360 | 13.80 | 79.50 | 0 | 2320 | | |
| Latrobe (1967–1968) | 5.95 | 296 | 21.70 | 4.35 | 38.30 | 5.50 | 15.25 | 81.50 | 468 | $1032 | 221 |
| (1968–1969) | 20.00 | 958 | 50.50 | .73 | 125.00 | 7.00 | 63.00 | 268.00 | 1500 | | |
| Total (1967–1968) | $155.35 | $2250 | $162.70 | $10.35 | $566.00 | $220.80 | $207.00 | $182.50 | | | |
| (1968–1969) | $242.00 | $4561 | $286.70 | $3.83 | $1031.00 | $230.80 | $381.30 | $834.00 | | | |

## CHART III-C-2

## DISTRICTS WITH DECREASE IN PER-PUPIL EXPENDITURES

| Name of district | Administration | Instruction | Health | Plant operation | Plant maintenance | Fixed charges | Transportation | Total spent per pupil | Dollars lost | Percent lost |
|---|---|---|---|---|---|---|---|---|---|---|
| Maricopa Unified (1968–69) | $51 | $1,030 | $24 | $126 | $95 | $86.50 | $112 | $1,320 | $20 | 1.315 |
| (1969–70) | 54.80 | 980 | 23.80 | 132 | 85.50 | 115.50 | 116 | 1,500 | | |
| Washington Elementary (1968–69) | 79.40 | 848 | 0 | 366 | 143 | 103.80 | 45 | 1,584 | 24 | 1.51 |
| (1969–70) | 62.30 | 930 | 0 | 340 | 80.50 | 101 | 43 | 1,560 | | |
| Coast Joint Union High (1968–69) | 77.50 | 930 | 23.60 | 130 | 219 | 104.50 | 152 | 1,640 | 60 | 3.65 |
| (1969–70) | 78 | 990 | 22.30 | 104 | 158 | 106 | 124 | 1,580 | | |
| Castaic Union (1968–69) | 70.50 | 565 | 29.30 | 76.50 | 63 | 74 | 66 | 950 | 60 | 6.3 |
| (1969–70) | 66.50 | 490 | 32.50 | 73.50 | 70 | 73 | 84.50 | 890 | | |
| Point Arena Joint Union High (1968–69) | 66.70 | 635 | 0 | 100 | 35 | 102.50 | 260 | 1,200 | 160 | 13.4 |
| (1969–70) | 86 | 685 | 0 | 89.50 | 46.50 | 69.50 | 62 | 1,040 | | |
| TOTAL (1968–69) | $345.10 | $4,018 | $76.90 | $798 | $555 | $471.30 | $635 | | | |
| (1969–70) | 346.30 | 4,075 | 78.60 | 738 | 440.50 | 465 | 427.50 | | | |

## CHART III-C-3

## "BASIC PROGRAM MODEL"
## RECOMMENDED BY THE STATE DEPARTMENT OF EDUCATION
## ASSUMING AVERAGE STATE EXPENDITURE

**(NOTE: All figures are dollars per pupil)**

| | 1968–69 | 1970–71 | Percentage of current expense |
|---|---|---|---|
| Instruction | | | |
| Salaries | $454.60 | $501.00 | 63 |
| Material | 89.31 | 98.20 | 12.4 |
| Administration | 39.10 | 43.10 | 5.45 |
| Health | 8.66 | 9.54 | 1.2 |
| Plant operation | 76.17 | 83.83 | 10.5 |
| Plant maintenance | 35.44 | 39.36 | 4.95 |
| Transportation | 17.95 | 19.71 | 2.48 |
| | $570.23 | $794.74 | |

## CHART III-C-4

## LAHONDA-PESCADERO UNIFIED S.D.

| | 1971–72 expenditures | Percent | −200 | Percent | −600 | Percent |
|---|---|---|---|---|---|---|
| Instruction | | | | | | |
| Salaries | $820 | 64 | $709 | 59.5 | $494 | 56.8 |
| Materials | 72 | 5.4 | 44.50 | 3.75 | 31 | 3.55 |
| Administration | 42 | 3.17 | 26 | 2.2 | 10 | 1.15 |
| Health | 1.19 | .09 | 1.19 | .1 | 1.19 | .136 |
| Plant operation | 80 | 6.0 | 70 | 5.9 | 50 | 5.75 |
| Plant maintenance | 53.50 | 4.02 | 53.50 | 4.5 | 31.50 | 3.6 |
| Transportation | 125.00 | 9.45 | 121 | 10.2 | 121 | 13.9 |
| Fixed charges[1] | 134 | 10.15 | 134 | 11.3 | 134 | 15.4 |
| | $1,325.69 | | $1,185.69[2] | | $872.69[2] | |

[1] Fixed Charges were omitted from both the State Department of Education recommendations and from our questionnaire, so we show them as a constant.
[2] Portions of the $200 and $600 decreases went to noncurrent expenditure categories, such as capital outlay.

## CHART III-C-5
## PALO ALTO UNIFIED SD

| | 1971-72 expenditures | Percent | −200[2] | −600[2] |
|---|---|---|---|---|
| Instruction | | | | |
| Salaries | $1,008.99 | 72.94 | 2 | |
| Material | 48.67 | 3.52 | 3 | |
| Administration | 41.75 | 3.02 | 2 | |
| Health | 11.29 | .82 | 2 | |
| Plant operation | 99.29 | 7.18 | 2 | no response |
| Plant maintenance | 58.44 | 4.22 | 3 | |
| Fixed charges | 94.69 | 6.84 | no response | |
| Transportation | 20.20 | 1.46 | 3 | |
| | $1,383.32 | | | |

*Key*
[1] = significant reduction
[2] = drastic reduction

## CHART III-C-6
## BERKELEY UNIFIED SD

| | 1971-72 expenditures | Percent | −200 | Percent | −600 | Percent |
|---|---|---|---|---|---|---|
| Instruction | | | | | | |
| Salaries | $990 | 64.8 | $875 | 65 | $581 | 62 |
| Material | 127 | 8.8 | 81 | 6 | 50 | 5.3 |
| Administration | 89 | 5.8 | 70 | 5.85 | 49 | 5.2 |
| Health | 12 | .78 | 11 | .81 | 9 | .96 |
| Plant operation | 105 | 6.9 | 95 | 7.04 | 83 | 8.8 |
| Plant maintenance | 35.50 | 2.32 | 32.50 | 2.42 | 30.50 | 3.25 |
| Fixed charges[1] | 140 | 9.17 | (140) | (10.4) | (140) | (14.9) |
| Transportation | 35 | 2.28 | 35 | 2.6 | 0 | 0 |
| | $1,532.50 | | $1,348.50[2] | | $942[2] | |

[1] Fixed Charges were omitted from both the State Department of Education recommendations and from our questionnaire, so we show them as a constant.
[2] Portions of the $200 and $600 decreases went to noncurrent expenditure categories, such as capital outlay.

## CHART III-C-7
## EMERY UNIFIED SD

| | 1971-72 expenditures | Percent | −200 | Percent | −600 | Percent |
|---|---|---|---|---|---|---|
| Instruction | | | | | | |
| Salaries | $1,560 | 64 | $1,452 | 64 | $1,261 | 62 |
| Material | 122 | 5 | 103.50 | 4.5 | 88 | 4.33 |
| Administration | 130 | 5.35 | 103 | 5.68 | 130 | 6.4 |
| Health | 99 | 4.06 | 83.50 | 3.65 | 49 | 2.42 |
| Plant operation | 253 | 10.4 | 253 | 11.2 | 253 | 12.45 |
| Plant maintenance | 58 | 2.38 | 48 | 2.1 | 45 | 2.22 |
| Fixed charges[1] | 186 | 7.65 | (186) | (8.15) | (186) | (9.18) |
| Transportation | 37 | 1.52 | 34 | 1.49 | 22 | 1.08 |
| | $2,445.00 | | $2,289[2] | | $2,034.00[2] | |

[1] Fixed Charges were omitted from both the State Department of Education recommendations and from our questionnaire, so we show them as a constant.
[2] Portions of the $200 and $600 increases went to noncurrent expenditure categories, such as capital outlay.

## CHART III-C-8
## VACAVILLE UNIFIED SD

| | 1971-72 expenditures | Percent | +200 | Percent | +600 | Percent |
|---|---|---|---|---|---|---|
| Instruction | | | | | | |
| Salaries | $505 | 73 | $619.50 | 70 | $722.50 | 65.5 |
| Material | 26.50 | 3.8 | 43 | 4.8 | 127.50 | 11.5 |
| Administration | 24 | 3.45 | 31.50 | 3.55 | 40 | 3.6 |
| Health | 6.75 | .97 | 11.25 | 1.27 | 17.50 | 1.58 |
| Plant operation | 56 | 8.05 | 58.50 | 6.65 | 62.50 | 5.62 |
| Plant maintenance | 22.90 | 3.3 | 63.40 | 7.15 | 65 | 5.88 |
| Fixed charges[1] | 37.00 | 5.3 | (37) | (4.18) | (37) | (3.35) |
| Transportation | 18.80 | 2.7 | 23.80 | 2.69 | 35 | 3.15 |
| | $697 | | $888[2] | | $1,107[2] | |

[1] Fixed Charges were omitted from both the State Department of Education recommendations and from our questionnaire, so we show them as a constant.
[2] Portions of the $200 and $600 increases went to noncurrent expenditure categories, such as capital outlay.

## CHART III-C-9

## SAN LORENZO UNIFIED SD

| | 1971–72 expenditures | Percent | +200 | Percent | +600 | Percent |
|---|---|---|---|---|---|---|
| Instruction | | | | | | |
| Salaries | $580 | 74.5 | $710 | 73 | $820 | 63.5 |
| Material | 24.50 | 3.15 | 47.50 | 4.86 | 119.50 | 9.4 |
| Administration | 22.80 | 2.92 | 34.80 | 3.56 | 40.80 | 3.15 |
| Health | 1.99 | .255 | 2.99 | .305 | 4.49 | .346 |
| Plant operation | 66 | 8.45 | 77.50 | 7.95 | 88 | 6.83 |
| Plant maintenance | 24.70 | 3.17 | 36.70 | 3.75 | 145.70 | 11.35 |
| Fixed charges[1] | 54.70 | 7.0 | (54.70) | (5.6) | (54.70) | (4.25) |
| Transportation | 7.50 | .96 | 11.50 | 1.18 | 15.50 | 1.2 |
| | $780 | | $976[2] | | $1,288.69[2] | |

[1] Fixed Charges were omitted from both the State Department of Education recommendations and from our questionnaire, so we show them as a constant.
[2] Portions of the $200 and $600 increases went to noncurrent expenditure categories, such as capital outlay.

## CHAPTER IV

# PROPOSED DISTRIBUTION FORMULAS

Our purpose is to design a school aid formula which embodies the legal principle announced in the *Serrano* case: namely, that the quality of a child's schooling should not depend upon wealth, other than the wealth of the state as a whole. This principle accords with the central philosophy underlying this nation's public schools. The battle fought by Horace Mann and other reformers in the first half of the 19th century succeeded in establishing the principle that education should not be the exclusive privilege of children whose families could afford it, but, instead should be available by right to all.

In practice, this principle has been eroded by overreliance upon local property taxes to provide revenue for public schools. Wealthier families have clustered themselves in separate districts, where they can capitalize unfairly upon their disproportionate shares of taxable wealth. At the same time, by segregating themselves in property-rich districts, the wealthier classes minimize the necessity of contributing toward public education for the poor. This is, of course, the basic inequity that was ruled unconstitutional in the *Serrano* case.

This chapter will first attempt to clarify the nature of the inequities in the present system. Then there will be a general discussion of alternative remedies. Following that, our actual proposals will be described, and simulated results will be shown for a sample of districts. *The simulated results for all districts will appear in Volume II of this Report.* Finally, there will be a discussion and simulation of some alternative formulas which use household income per pupil as an index of school district wealth.

### *Horizontal and Vertical Inequity*

It is important at the outset to distinguish between two separate kinds of inequity in the existing system. *Horizontal* inequities occur when people with the same amount of income or wealth are somehow treated unequally. *Vertical* inequities refer to excessive burdens placed upon low income people relative to high income people.

The present system appears to contain horizontal inequities because the tax base per pupil varies between school districts.[1] Consider, for example, two families with identical incomes and houses assessed at the same value. Suppose that one family lives in Beverly Hills and the other in the Los Angeles Unified District. In Beverly Hills the additional property tax rate required to raise an additional $100 per pupil is less than 20 cents per $100 of assessed valuation. In Los Angeles it would require a tax rate increment of more than 70 cents to raise an additional $100 per pupil. Therefore the family in Beverly Hills can obtain additional school resources more cheaply than its identical counterpart in Los Angeles.

However, this apparent inequity is to some extent offset by differences in housing costs between Beverly Hills and Los Angeles. The fact that an extra $100 for local schools requires a smaller property tax increment in Beverly Hills is reflected to some extent in higher prices for comparable houses in Beverly Hills.[2] That is, because there is a tax advantage to living in Beverly Hills, the same house would be worth more money there. The extra housing cost in part represents the price of admission to a school district with a property tax advantage. Indeed, the extra housing cost in theory might *completely* offset the property tax advantage for a family moving into Beverly Hills. Otherwise, families in Los Angeles and elsewhere would try to move to Beverly Hills, by bidding up the price of housing there. So a $20,000 family which has recently moved to Beverly Hills may be no better off than a $20,000 family which recently located in Los Angeles, because the cost of housing offsets the difference in schools and tax rates. If this is true, then within any income class the locational decision is purely a matter of taste.

For another example, consider families living in Emeryville, an industrial enclave famous for its large amount of assessed valuation per pupil. If families outside Emeryville thought this was an important advantage, they could move in; and if a large number

[1] These apparent horizontal inequities between school districts are distinct from the horizontal inequities between individual properties that result from uneven assessment of property values. The apparent inequity between districts results from reliance upon local taxation in any form. The inequity between parcels of property has to do with the nature of the property tax, and could arise even with a uniform statewide property tax rate. In a discussion of *Serrano* only the former issue is germane.

[2] Robert D. Reischauer, Brookings Institution, has brought this point forward in his recent analysis of school finance issues. We are grateful for his communication with us on this matter.

of families tried to move in, the price of housing would rise. But housing costs are not particularly high in Emeryville; it is certainly not Beverly Hills. Instead, the cost of enjoying the tax advantage in Emeryville is the pain of tolerating pollution, ugliness, and other dangers associated with a heavily industrialized environment. A family earning $5000 and living in Emeryville is no better off than a $5000 family in a district with a less favorable property tax but which does not suffer the disadvantages of living in the midst of manufacturing.

Thus in theory, the total cost of living in a district with good schools and low taxes is more than the amount of local taxes itself. It may also include additional cost of housing in Beverly Hills or danger and pollution in Emeryville. To the extent that such nontax costs offset differences in tax costs, the differences in taxes alone overstate the horizontal inequities between districts.

Even if the housing market does alleviate horizontal inequity, the present system does produce *vertical* inequity. The reason is that high-income and low-income families have different housing markets. In American cities the older, cheaper housing tends to be located near industrial and commercial zones, while newer, more expensive homes are built in outlying suburbs. Some inexpensive housing does get built in the suburbs, of course, but developers of apartments or small houses are frequently barred by large-lot zoning and other local restrictions. Therefore, even if a low-income family prefers a suburban location, it may not be able to find a small enough house to suit its budget. And of course a household head who faces possible unemployment cannot even consider buying a house in the suburbs. Because low-income families cannot compete in high-income housing markets, high-income households can escape paying the full price for the tax advantage their school districts provide.

In short, the present system is unfair because it allows affluent households to retain for themselves all the proceeds from taxes on their property. Lower-income families are denied entry to wealthy residential districts. If they live in districts like Baldwin Park, they must pay very high tax rates to obtain additional school monies. If they live in districts where they can tax industrial and commercial property, such households must suffer smog, noise, and crime. Either way, a low-income family with an avid taste for public schools must pay a heavy price. ***The housing market may reduce inequities within an income class, but not between income classes. Consequently, affluent households pay less for the privilege of indulging their taste for superior schools.***

#### *One Possible Remedy: Full State Assumption*

Probably the least complicated proposal for rendering school quality independent of local wealth is the arrangement which has come to be known as Full State Assumption (FSA). This general idea was put forth in the 1930's by Henry Morrison and revived in the 1960's by former Harvard University President, James Bryant Conant. The defining characteristic of FSA is that it eliminates locally raised revenues for support of public schools. *All* school money comes from the state, and it is distributed to local districts in a uniform way, such that any two students who share the same educational characteristics receive an equal grant of state money. Funds to support such state grants might come from a variety of state revenues, including statewide property taxes.

Despite its evenhandedness, Full State Assumption would sharply increase the tax rates on low-income people who happen to live in districts containing large amount of industrial and commercial property. If a statewide property tax replaced local property taxes, then such districts would experience an increase in tax rates, as would most districts with high expenditure levels and larger than average amounts of assessed value per pupil. Low-income households in districts such as Emeryville, San Francisco, and John Swett Unified would probably find themselves paying higher property tax rates under FSA than in the existing system.

There are two ways to avoid this problem. The first would be to eschew any statewide property tax. FSA would then simply eliminate existing local property taxes for schools and would substitute state revenues of other kinds. This kind of across-the-board property tax relief was considered and rejected in Chapter II.

The second method of alleviating the regressivity of a statewide property tax would be to institute a program of property tax relief based on household income. This is the circuit breaker program which was presented in Chapter II. Thus, in addition to its desirability as an effective tax relief mechanism, the circuit-breaker has the added advantage that it prevents the statewide property tax from increasing the tax burden on low-income families in property rich districts.

#### *A Second Alternative: District Power Equalizing*

What makes Full State Assumption controversial is that it greatly reduces the fiscal role of local school districts. The major alternative to Full State As-

sumption is a plan usually labeled District Power Equalizing (DPE).[3] This scheme attempts to equalize the effective wealth of different school districts, while at the same time preserving a large measure of local control over tax rates and levels of expenditure. At its roots, DPE embodies a simple concept; it assures equal school revenues for equal local district tax effort. This is so regardless of the wealth base of the decision-making unit. Let us provide a few operational specifics.

As typically envisioned, DPE retains the local school district as the basic decision-making unit for determining tax rates and revenue levels. The state may provide expenditure and tax rate boundaries within which each district must constrain its decision, but the specific points within such taxing and spending "bands" are at the discretion of district boards of trustees or electorates, depending upon precisely where a state legislature chooses to vest decision-making authority.

Theoretically, DPE can be based upon almost any form of taxable wealth; for example, property, income, or net worth. However, the typical DPE proposal is premised upon retention of the property tax. State revenues are also required to prevent the DPE schedule from imposing an intolerable local tax rate on high-spending districts.

No reasonable DPE advocate suggests that local school officials or citizens be allowed total discretion regarding expenditure levels. At the very least, some minimum dollar amount and corresponding tax rate are usually specified (the minimum expenditure may be higher for secondary than for elementary pupils). The justification for a state mandated expenditure and tax floor is that every child is thought to be in need of an education of at least a minimum quality.

A typical DPE schedule, with an arbitrarily selected minimum point, is depicted in Figure IV-1 as Plan A. This is a simplified schedule with a uniform expenditure-tax rate relationship or slope. More complicated plans may have one or more "kinks" where the slope becomes less steep. This means simply that a district must tax itself harder to obtain additional money above the kink than below it. Such slope adjustments are intended to serve as a stronger incentive for districts to spend up to the kink than beyond it. Plan B in Figure IV-1 illustrates this slightly more complicated version, again with hypothetical numbers.

The primary feature of a DPE plan is that the state guarantees a local school district any expenditure per pupil it selects from the DPE schedule's vertical axis, if the district taxes itself at the appropriate rate. For districts which lack sufficient wealth to generate the amount of money that a given tax rate entitles them to spend, the state of course must contribute a subsidy to make up the difference. On the other hand, for wealthy districts, revenues generated in excess of the scheduled per pupil expenditure level revert to the state. These "recaptured" funds are then redistributed, along with the necessary state general revenues, to the poorer districts.

Some people object to the idea of a wealthy school district exporting money to poorer districts. However, the essential point of *Serrano* and subsequent rulings is that allowing wealthy districts to *keep* all the money they raise is unconstitutional. Reliance upon local wealth contravenes the basic principle of public schools, that all taxpayers should bear the cost of educating all children in the state, not just their own or those in the neighborhood. If education is so important that the state requires all children to attend school, then the state must guarantee that all children have equal access to school resources. Any plan that satisfies this principle—whether FSA, DPE, or something still to be conceived—must necessarily redistribute resources from wealthy school districts to poorer ones.

District Power Equalizing, like Full State Assumption, would require a circuit-breaker to avoid increasing the tax burden on low-income people in high-spending property-rich districts. Under any reasonable DPE schedule tax rates in Emeryville, San Francisco, and Fall River Joint Unified would have to rise if these districts wished to spend anything near their current dollar amounts. Just as with FSA, therefore, the circuit-breaker is essential to protect low-income people in such districts. (See Table IV-10 below.)

### *What To Do Until the Circuit-Breaker Comes: Progressive DPE and a Split Roll*

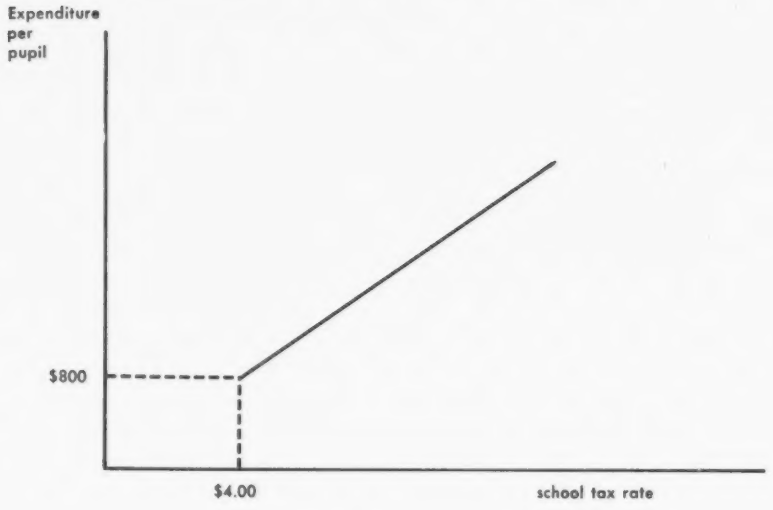
In the absence of a circuit-breaker, however, it may still be possible to modify DPE so as to reduce the additional tax burden on low-income households in high-spending, property-rich districts. This could be accomplished by making the DPE schedule a "progressive" one. Progressive DPE would require less tax effort in districts with relatively low amounts of household income per pupil. For example, suppose that the original DPE schedule allowed an additional $100 per pupil for every $1.00 increase in the property tax rate over some range. A progressive schedule might then stipulate that the additional tax rate required to get the extra $100 per pupil would be

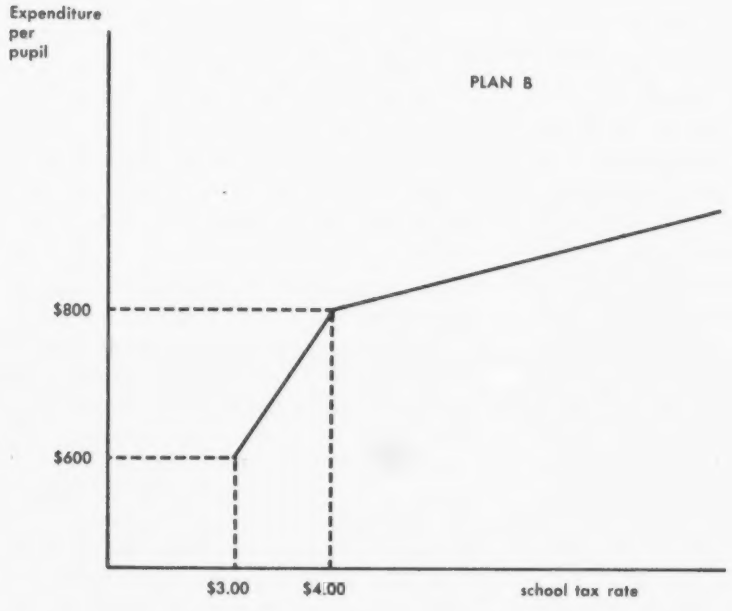
[3] John Coons, William Clune, and Stephen Sugarman: *Private Wealth and Public Education;* Harvard University Press, Cambridge, 1970.

Figure IV-1

## ILLUSTRATIVE DISTRICT POWER EQUALIZING SCHEDULES

PLAN A



$1.00, multiplied by the ratio of income per pupil in the district to the average income per pupil throughout the State. Thus a district in which the amount of income per pupil was 120 percent of the state average would be required to raise its tax rate by 1.2 percent in order to get the increment of $100 per pupil.

Unfortunately, progressive DPE would protect entire districts rather than individual households. It would impose lower tax rates than regular DPE on all districts with less than average income per pupil. But, if industrial and commercial property tends to be concentrated in districts where the residents have relatively low income, then progressive DPE would have the effect of reducing the average property tax rate paid by industrial and commercial property. In other words, while progressive DPE is designed to protect low-income households, it may also protect industrial and commercial enclaves.

This new problem could itself be corrected by splitting the property tax roll between residential and non-residential property. Industry, commercial uses, utilities, agribusiness, and other non-residential property could be taxed by the State at a separate, statewide rate. Then the DPE schedule could apply only to residential property within the separate school districts. Every district would choose its desired level of expenditure per pupil, which would imply a certain property tax rate to be imposed only upon residental property within the district.

To prevent drastic increases in the tax rates paid by poor people in property-rich districts, the choice is between adopting a circuit-breaker plan or adopting a progressive DPE formula with a split roll. The circuit-breaker is more direct, because it treats individual households rather than entire districts. Simulation of progressive and split-roll DPE formula also indicates that the circuit-breaker is more effective (See Table IV-12 below). Moreover, the property tax roll would require an amendment to the California Constitution, and progressive DPE requires an acceptable measure of household income per pupil. Finally, the circuit-breaker seems preferable not only because it is a more effective and convenient way to protect low-income households in high-spending, property-rich districts—but also because it is the most effective method for dealing with the whole issue of property tax relief (see Chapter II).

### *Relative Merits of FSA and DPE: Some General Considerations*

Before describing and simulating the specific FSA and DPE options we propose, it is worthwhile to consider some important differences between the two concepts in general.

At the outset it is important to emphasize that, in spite of legitimate disagreement over the relative merits of FSA and DPE as alternatives to each other, *either plan is certainly more cogent than the irrational proposal to have the state guarantee a basic minimum grant per pupil, with additional money raised from taxes on local wealth.* Either the state knows how much money every child should get, or it does not know. If the State feels confident that it knows the optimal amount to be spent per pupil, then it can adopt a FSA plan. If the State knows only that adequate education requires a certain minimum expenditure, and that above some point there are probably diminishing returns, then it should adopt a DPE plan. There is no logical justification for determining an exact foundation level, and then letting additional expenditures be determined by the haphazard distribution of local wealth. As a plan for allocating education resources, this would be irrational and inefficient. Its only possible appeal is political—that it preserves the advantages of wealth.

Full State Assumption and District Power Equalizing would seem to offer a distinct ideological choice: DPE appears to be more "libertarian," FSA more "egalitarian." That is, DPE is designed to preserve local choice over the levels of school spending and taxation. FSA centralizes this decision, but is designed to apportion resources equally according to need. In practice, however, the difference may not be this clear at all. Indeed, FSA might actually result in more meaningful local control, while DPE could prove more effective in breaking the link between household wealth and educational expenditure.

At first glance, FSA would seem to eliminate local control by removing the authority of local school boards to determine the size of the district budget. Since all funds would come from the State, the local board and school administration would no longer have to go to the voters for money, and they might instead become accountable only to the State. For its part, the State authorities might seek the least common denominator in schooling, thereby foisting unwanted programs on some communities and denying other districts the opportunity to try different approaches. In short, the entire State could become a large school district subject to the multiple horrors of any large and overly bureaucratized system. Experience with big city school districts have amply demonstrated that there is little, if anything, to be gained from large size alone.

On the other hand, local control involves much more than the power to balance the district budget. Once freed from the burden of constantly worrying about money, where it comes from, and whether or not taxes can be raised again, local school boards will at last have the time and mental elbow room to pay attention to important decisions regarding matters such as the goals of schools. FSA could therefore provide the opportunity to revitalize the role of local school boards in matters of important educational policy. Under DPE, school boards would remain shackled with the responsibility of raising money from the voters.

At the same time, local school boards are not the only legitimate agents of local control. Under FSA, the State could use its increased fiscal leverage to get the staff and clients of local schools involved in determining the allocation of resources within those schools. This would place local control in the hands of people who are most intimately affected by the operations of a given school and who have the greatest amount of first-hand information about its requirements. Further, the State could use its fiscal control to expand the special courses and other services offered by county school districts. (See discussion of this point in Chapter III.) Such special offerings would improve local control in the sense that each student would have a wider range of options. Strengthening the role of school staff and parents, as well as the role of the county, may be easier under FSA than under DPE, where school boards remain "sovereign" in effect.

Just as it is not at all clear whether DPE or FSA would better achieve the libertarian goal of local control, it is also not obvious which plan would more effectively break the bonds between wealth and educational expenditure. Some evidence indicates that higher-income households would be willing to impose higher property tax rates on themselves than would their lower-income peers under a DPE formula,[4] even though low-wealth districts may presently tend to have higher tax rates. If this is true, then DPE would not eliminate the correlation between income and school expenditure. The effect of DPE in neutralizing the effect of wealth on education might be analogous to the effect of "freedom of choice" plans in achieving racial desegregation. There is nothing inherently bad about a freedom of choice plan; the problem simply is that they usually do not suffice to remedy the previous evil, racial segregation.

[4] David Stern, "The Effects of Alternative State Aid Formulas on the Distribution of Public School Expenditure in Massachusetts," unpublished Ph.D. dissertation, MIT Department of Economics, Cambridge, 1971.

In a District Power Equalizing scheme, school expenditures and tax rates would be established by voters or their representatives. If a family with a minority view felt discriminated against either in terms of the quality of schooling it desired for its children or the tax rate it wished to pay, could not it allege that it was being "injured" by virtue of the geographic location of its residence? If the family lived in a neighboring school district, which might be as close as across the street, its expenditure level might be higher or its tax rate lower. Is this not an instance of unfair "place discrimination?"

One response to this charge is that DPE permits some diversity among school districts, so that a family with a minority view in one school district might find a school district where it agreed with the majority. This option is not available under FSA, where all districts have the same tax rate and level of spending. On the other hand, egalitarians may object to this argument on the grounds that the rich are more mobile, and the poor less able to vote with their feet. Moreover, if people did exercise their option to move, the resulting resettlement might lead to further social segregation. In our society, school and tax tastes often reflect religious, economic, racial, and age groupings. The danger of DPE is therefore that the more affluent classes will not only maintain but actually increase their tendency to segregate themselves in districts where they can exclude less affluent children from the classrooms, and lavish extra resources on their own offspring (even at the cost of higher taxes).

However, FSA poses the even greater danger that the affluent will abandon public schools entirely. This could create a rigidly stratified system in which attendance at public school becomes a real social and economic disadvantage.

Thus a possible advantage of DPE over FSA is that public schools may remain more competitive with private schools. Under FSA, the State would probably not be willing to incur the cost of providing grants to all children equal to the amounts previously spent in wealthy districts. Consequently, the more affluent parents in such districts might choose to send their children to private schools. This would be especially detrimental to children whose parents could not afford the cost of private school. In short, a low-funded FSA system might produce a statewide system of public schools for the poor while driving the more affluent into private schools.

DPE makes it possible to accommodate high-spending districts at less cost to the state. The schedule can be set in such a way that the tax rates required

to obtain high levels of expenditure would cost wealthy households no more than the price of sending a child to private school. For example, imagine a family with a house assessed at $15,000 (i.e., full value of $60,000) and one child of school age, residing in a district that now spends $1,500 per pupil. Suppose that the DPE schedule guaranteed $700 per pupil with a statewide minimum tax rate of $4.00 per $100 of assessed value. Suppose further that an additional $800, resulting in total expenditure of $1,500 per pupil, could be obtained with an additional local tax rate of $8.00. This $8.00 local tax would cost $1,200 for the family with a home assessed at $15,000. Faced with these options, the strongest position the local school board could adopt against the public schools would be to cut the tax rate back to the $4.00 minimum. Then the family would save $1,200 in taxes over what it would have cost to maintain the existing expenditure level of $1,500 per pupil. But unless the family felt that $1,200 spent in private school could buy more than $1,500 in public school, it would prefer to have the school board impose the $8.00 local tax rate required to keep the current level of spending in the public schools.

Representatives of high spending districts might argue that the tax rates in the foregoing example are expensive. If their argument prevailed, then the DPE formula could simply be made more generous. For instance, an additional expenditure of $800 per pupil might require only a $6.00 local tax rate instead of an $8.00 rate. Such a shift in the formula, however, would not represent a victory for the wealthy over the poor, because all districts would now be entitled to the extra $800. The principle of DPE puts high-spending districts, which heretofore have tended to be wealthier districts, in the position of advocating more state aid to public schools in general. If state taxes are not regressive, then this is a desirable consequence.

### *The Choice*

The selection of DPE over FSA or FSA over DPE cannot be made on evidence, there being no actual experience with either in the United States. Arguments pro and con for each of the two plans are strong, but they are strictly *a priori* arguments. The authors of this Report are themselves divided on the issue. However, our preferred plan, though containing elements of FSA, is more nearly a DPE proposal. Here are the final reasons on which we base our choice.

1. We assume that FSA is likely to provide greater equity in the distribution of educational services in the short run. However, we are concerned about the trade-off between the possibility of securing that greater degree of equity and the possibility of inflicting long-term damage to the viability of the public elementary and secondary school system. Either by enrolling their children full time in private educational institutions or by contracting privately for supplementary academic instruction (hiring tutors), rich families can maintain their present educational advantages whenever they feel their choices in the public sector are not adequate. It might be countered that our present district structure and school attendance zoning practices yield us only a small amount of social class integration anyway, so it would not matter much if a minority of parents opted out of the public system. But what is really at stake, we feel, is the esteem in which the public education system is held. If the great majority of richer households turned away from the public system, even though that group was a minority of the whole population, the danger exists that the public system would become suspect as being inferior.

2. On the other hand, if DPE should turn out to perpetuate our present kinds of educational disparities, or if it becomes plain that district boundaries in a DPE system were serving as barricades to block substantial numbers of students from good educational opportunities, then we see no alternative but for California to adopt FSA.

Thus in our view the correct sequence of policy change is: first, DPE—then, if necessary, FSA. Fortunately, if FSA does become necessary, it would be easier to implement once DPE had been phased in.

### *Specific Proposals*

The preceding sections have raised some of the perplexing questions which underlie the choice between FSA and DPE. As indicated, we ourselves are divided on the issues, and so may be the California Legislature. The choice, finally, must be a political one. Therefore, we have developed specific proposals for both FSA and DPE. The following sections will describe these proposals, discuss how they were derived, and explain how their effects on individual districts were simulated.

The proposed plan contains two main parts. The first part is a set of new *categorical aid programs.* These would all be fully funded by the State. The second main part is the formula for distributing *money for noncategorical purposes.* Here is where the choice between FSA and DPE will arise.

*New Categorical Aid Programs*

The rationale for categorical aid is that there are some unavoidable costs which vary widely between school districts. Unless the State makes special allowances for these costs, districts would have to pay for them out of general funds. Districts in which these unavoidable costs were particularly high would find themselves short of money for general instructional purposes.

We recommend that the State increase its aid to an amount sufficient to cover the full approved cost of transportation, construction, food services, children's centers, and compensatory education. Some existing state aid, such as money for transportation and construction, would be absorbed in the new categorical programs. The rest of the existing State categorical aids and all existing federal categorical aid would continue to be distributed exactly as they are now. Table IV-1 lists these continuing state and federal categorical programs.

Table IV-1

CONTINUING STATE AND FEDERAL CATEGORICAL AIDS, NOT TO BE ABSORBED IN NEW CATEGORICAL OR NONCATEGORICAL GRANTS

**State** (total $45 million in 1970–71)

Driver training

Apportionment for the elementary school reading program

Allowance for instructional television

Apportionment for special teacher employment

Allowance for demonstration programs in reading and mathematics

Other "special allowances"

**Federal** (total $182 million in 1970–71)

Economic Opportunity Act (PL 88-452)

Elementary and Secondary Education Act (PL 89-10)

Other federal income from federal sources (PL 90-35)

National Defense Education Act (PL 85-864)

Manpower Development and Training Act (PL 87-415)

Vocational Education Act (PL 88-210 or 90-576)

Other federal income from state sources (PL 90-35, 90-248, EPDA)

Vocational Education Act of 1968

Preschool Education Aid (PL 87-543, California Education Code 16643–16644)

*Transportation*

The general procedure for allocating transportation grants would be as follows. The Superintendent of Public Instruction will determine the reimbursable cost per pupil-mile. He will also establish guidelines to determine what, if any, adjustments will be made to this amount to allow for variation in such local characteristics as climate or topography. Finally, he may establish guidelines to determine in what manner and for what purposes the number of pupil-miles will be counted. At the beginning of the year each district would estimate the number of allowable pupil-miles of transportation that it will provide. This estimate would presumably be based on last year's actual figure. The State would disburse its transportation aid in monthly installments and would adjust from month to month for any difference between the estimated and the actual numbers of pupil-miles. Districts would set up a new Transportation Fund to account for the state aid received and the expenses incurred. If state aid should exceed actual outlay, then the excess would be kept in the Transportation Fund and deducted from next year's state aid. Deduction of the excess from the amount of next year's aid would have the somewhat undesirable effect of eliminating any incentive for a district to economize on transportation costs. But the alternative would be to let the district keep any money it saved and apply it for general purposes, with the even more undesirable consequence that some districts could get more than their fair share of money for general noncategorical expenditure.

In 1970–71 total outlay for transportation was $81 million. State aid for transportation was $33 million. Assuming that all actual transportation expenses in 1970–71 would have been counted as approved cost under the new program, and also assuming that total outlay would not have increased under the new program, the net additional demand for state revenues would have been $48 million in 1970–71.

*Construction*

The costs of site acquisition, site improvement, and building construction would be paid by a new state school building authority which would raise the necessary revenues through sale of bonds. The Superintendent of Public Instruction would set guidelines for approved construction costs, much as is done now under the state school building aid program. Expenditures by local districts for sites and construction beyond the amount of cost approved by the State, in

addition to expenditures for minor capital outlay such as equipment, could be paid out of funds received by the district for current noncategorical purposes.

Alternatively, districts might be allowed to borrow for such additional capital outlays. Since no district would be allowed to levy local property taxes for new debt service, such local borrowing would have to be secured some other way. Possibly a district might be allowed to encumber a certain percentage (say 5 percent) of the revenues it would expect to receive from the State in future years for noncategorical purposes.

Total outlay for buildings, site acquisition, and site improvement was $228 million in 1970–71. It is difficult to know exactly how much of this was financed by sale of bonds, as opposed to current tax receipts, because the proceeds from selling bonds may not all be spent in the same year. In 1970–71, 116 school districts sold $148 million worth of bonds, but actual outlay for construction in these districts amounted to only $93 million. The remaining $135 million of capital outlay in other districts was presumably financed by bonds sold in previous years, but exactly to what extent? Meanwhile, the 116 districts which did sell bonds also increased their cash balances by $105 million. The available data therefore do not show to what extent construction is financed from current tax receipts, nor whether some of the proceeds from selling bonds may be spent for current purposes.

Whatever the actual state of affairs, we recommend that the State simply take over the responsibility for borrowing money to pay the full approved cost of construction. The net increase in state borrowing in 1970–71 would have been $228 total construction outlay minus $4 million federal aid and $54 million in existing state aid—or $170 million. State borrowing would have replaced not only local borrowing but also local taxes for construction. However, since we could not isolate the amount (if any) of local taxes for construction, our computation of current cost to the State of non-categorical grants under DPE and FSA (Tables I-3 and IV-5) includes this amount. Thus our estimates include the amount of local taxes for construction as a current cost to the State, although our recommendation is for this to become a capital cost to the State.

### *Existing Debt Service*

The simplest way to handle existing debt service (for previous capital outlays) would be for the State to take over the liability for all local bonds outstanding. However, this would give an unwarranted state subsidy to those districts which have found the means to undertake new capital outlays in recent years. The same objection would apply under DPE if districts were allowed to use their noncategorical power equalized grants for repaying existing debt service.

On the other hand, requiring districts to pay for their debt service from local wealth would perpetuate the present excessive burden on poor districts. It is our conjecture that in the past poor districts built modest facilities and therefore should have the entire cost of their debt service assumed by the State. Wealthier districts, which would have been able to build better equipped structures and which would obviously have the continued use of these superior facilities, should not have all of their debt service paid for by the State.

Therefore, we propose a simple formula whereby districts with very low wealth would have their entire existing debt service paid by the State and districts with very high wealth would have to pay it all themselves. In between, the percentage paid by the State would depend on the amount of assessed valuation per pupil in a district. Table IV-2 shows our proposed formula. Those districts which remained responsible for paying part of their own debt service would have to raise the money through a local property tax. During the phase-in period this local tax might be part of the local tax already required to maintain the existing level of noncategorical expenditure per pupil in previously high-spending districts.

TABLE IV-2

**PROPOSED RELATIONSHIP BETWEEN DISTRICT ASSESSED VALUATION PER PUPIL AND THE FRACTION OF EXISTING DEBT SERVICE TO BE PAID BY THE STATE**

| District Assessed Valuation per ADA | Fraction Paid by State |
|---|---|
| Unified Districts | |
| less than $10,000 | 1.0 |
| $10,000 to $30,000 | (30,000–AV/ADA)/20,000 |
| more than $30,000 | 0 |
| Elementary Districts (K–8) | |
| less than $14,300 | 1.0 |
| $14,300 to $42,900 | (42,900–AV/ADA)/28,600 |
| more than $42,900 | 0 |
| High School Districts (9–12) | |
| less than $33,333 | 1.0 |
| $33,333 to $99,999 | (99,999–AV/ADA)/66,666 |
| more than $99,999 | 0 |

### *Food Services*

In 1970–71 the total cost of food services was $182 million; of which $126 million came from cafeteria fees, $32 million from federal aid, $2 million from state aid, and the remaining $22 million from local taxes. The local revenues were raised from both the general purpose property tax and the special over-

ride for meals for needy pupils. We propose that the State take over the $22 million now supported by local taxes and reimburse districts for the full approved cost of food. There is some danger that continued reliance upon cafeteria fees may impose an unfair burden on children who are unable to pay. Therefore, the present guidelines for distributing free food or reduced-priced lunches to needy pupils should be extended in such a way that no child must go hungry because he cannot afford to pay. Disbursement of state aid for food should follow the same procedure as proposed for transportation aid: monthly payments to be based on estimated cost, with any excess in the school fund at the end of the year deducted from the following year's state aid.

#### *Children's Centers*

These centers for preschool children were supported in 1970–71 by $13 million of state aid, $13 million federal aid, and $5 million raised by a local tax override, adding up to a total outlay of $32 million. We are proposing that the $5 million local contribution be replaced by additional state aid. Again, the Superintendent of Public Instruction would set the guidelines for determining approved cost, and any district that wished to spend more for children's centers would have to take the extra money out of its general allotment for noncategorical purposes.

#### *Compensatory Education*

As explained in Chapter III, we propose a large new program of compensatory education in two parts. The first part will allocate money to a district based on the number of children who score low on learning readiness tests when they enter elementary school, or achievement tests on entering high school. This part of the program would provide additional instruction for underachieving children. The second part of the compensatory education package would allocate money to districts based on the number of children with low socioeconomic status. The money might be used for auxiliary services such as breakfast, tutors or provision of study space, to offset some of the disadvantages that low income children face when they go home from school. Parents would play an important role in deciding how to spend the money for such auxiliary services. In both parts of the compensatory education program, school districts would receive their allotted amounts only after submitting proposals to the Superintendent of Public Instruction, explaining how the money will be spent.

#### *Evaluation*

The Legislature would determine the overall objectives of each of the categorical programs, but would have to rely upon the Superintendent of Public Instruction to define specific guidelines for approved cost. We therefore recommend that about 0.1 percent of the total budget for each new categorical program be earmarked for evaluation so that the Superintendent of Public Instruction will be able to monitor the results of the program and report periodically to the Legislature on how successfully the programs are achieving their overall objectives.

### *Proposed DPE and FSA Schedules for Distributing Noncategorical Funds*

The proposed DPE or FSA formulas would cover all expenses not funded by new or existing categorical aids. Thus noncategorical expenditure for a district in 1970–71 is defined as total expenditure (excluding transfer payments) plus net increase in cash balances, minus continuing State and federal categorical aid, and minus the total outlay for transportation, construction, debt service, food services, and children's centers. (See Appendix IV-A for the definitions of these income and expenditure items and Table IV-4 for the weights used in calculating total weighted ADA.)

The proposed plans are most easily explained in terms of expenditure per "K–6 equivalent." As shown in Table IV-4, students at different grade levels and with certain handicaps are given various weightings. A regular student in grades K–6 receives a weight of 1.0. A regular student in grades 7–8 receives a weight of 1.15. Thus a 7–8th grader is 1.15 K–6 equivalents. A grant of $700 per K–6 equivalent would provide $805 for each student in grades 7–8, as Table IV-3 shows.

We propose that either DPE or FSA be phased in over a three-year period, as set forth in Table IV-3. Figure IV-2 depicts the phasing-in for a typical unified district.

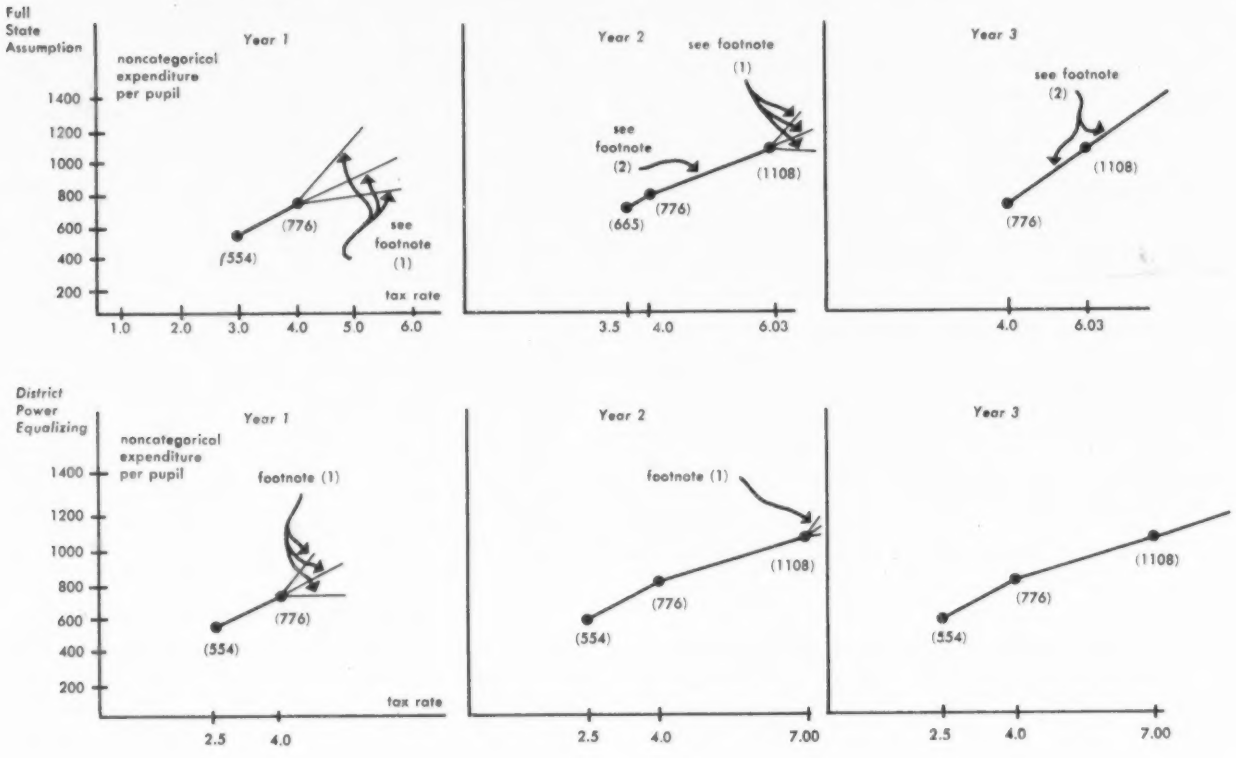
Under DPE noncategorical expenditures up to $700 per K–6 equivalent are fully wealth equalized in all years. A unified district would have to pay only the minimum $2.50 tax rate to receive $500 per K–6 equivalent. A $4.00 unified tax rate would yield $700 per K–6 equivalent.

The expenditure level of $700 per regular K-6 pupil was chosen to represent a normal amount of noncategorical expenditure. In 1970–71 more than 75 percent of the pupils in the State attended school in districts which spent no more than $700 per K-6 equivalent on noncategorical expenditure. The corresponding tax rate of $4.00, moreover, is substantially less than the average school tax rate in 1970–71. Eighty-six percent of the students in California attended school in districts which had 1970–71 school tax rates greater than

Figure IV-2

PROPOSED FSA AND DPE SCHEDULES:
SCHEDULE FOR TYPICAL UNIFIED DISTRICT

Relation of non-categorical expenditure per pupil (in 1970–71 dollars) to tax rate (in dollars per $100 of modified assessed value) assuming one-half of ADA are in grades K–6, one-sixth are in grades 7–8, and one-third are in grades 9–12, with no special students.




[1] Slope of schedule is the assessed value per ADA in *each* district maintaining noncategorical expenditure greater than $776 per pupil in year 1, $1,108 per pupil in year 2.

[2] Slope of schedule is the *average* assessed value per ADA in all districts maintaining noncategorical expenditure between $776 and $1,108 per pupil in year 1, greater than $1,108 per pupil in year 2.

$4.00. Therefore by guaranteeing an expenditure of $700 per K-6 equivalent with a tax rate of $4.00, the State will guarantee that three out of four California students will derive the benefits of higher noncategorical expenditure, while about six out of seven households will obtain some property tax reduction.

Under DPE any district may spend more than $700 per student in any year, but must pay for this higher expenditure level. In the *first* year any expenditure beyond $700 would come from a tax on *local* wealth. In the third year and thereafter such expenditures would be fully wealth equalized with a unified district receiving $100 per K-6 equivalent for each additional $1.00 in tax rate. This further wealth equalized schedule would apply in the *second* year only to expenditures from $700 to $1,000 per K-6 equivalent, with expenditures beyond that range still supported by local wealth.

FSA differs from DPE mainly in that no district may spend more than $700 per K-6 equivalent unless it was already spending more than $700 in 1970–71. Under FSA all districts with 1970–71 noncategorical expenditure levels below $700 per K-6 equivalent would have their expenditure level raised to $700 (but not beyond) by the third year of the program. Districts with 1970–71 noncategorical expenditure levels higher than $700 may maintain (but not exceed) their current level, but must pay correspondingly higher tax rates.

## TABLE IV-3

## TAX RATES AND CORRESPONDING AMOUNTS OF NONCATEGORICAL EXPENDITURE PER REGULAR UNWEIGHTED ADA, UNDER PROPOSED FSA AND DPE FORMULAS

**NOTE: Tax rates for grades 7–8 are levied on elementary districts where students reside, even if they attend schools operated by a high school district.**

| | Grade | Full State Assumption | | | District Power Equalizing | | |
|---|---|---|---|---|---|---|---|
| | | Year 1 | Year 2 | Year 3 | Year 1 | Year 2 | Year 3 |
| Minimum tax rate (dollars per $100 modified assessed valuation) | K–6 | 1.49 | 1.74 | 1.99 | 1.24 | 1.24 | 1.24 |
| | 7–8 | 0.48 | 0.56 | 0.64 | 0.40 | 0.40 | 0.40 |
| | 9–12 | 1.03 | 1.20 | 1.37 | 0.86 | 0.86 | 0.86 |
| | unified | 3.00 | 3.50 | 4.00 | 2.50 | 2.50 | 2.50 |
| Guaranteed minimum noncategorical expenditures per pupil (1970–71 dollars) | K–6 | $500 | $600 | $700 | $500 | $500 | $500 |
| | 7–8 | 575 | 690 | 805 | 575 | 575 | 575 |
| | 9–12 | 625 | 750 | 875 | 625 | 625 | 625 |
| Tax rate at the *normal expenditure point* ($700 per K–6 equivalent) | K–6 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 | 1.99 |
| | 7–8 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 | 0.64 |
| | 9–12 | 1.37 | 1.37 | 1.37 | 1.37 | 1.37 | 1.37 |
| | unified | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 | 4.00 |
| Noncategorical expenditure per pupil at the *normal expenditure point* | K–6 | $700 | $700 | $700 | $700 | $700 | $700 |
| | 7–8 | 805 | 805 | 805 | 805 | 805 | 805 |
| | 9–12 | 875 | 875 | 875 | 875 | 875 | 875 |
| Additional tax rate required to obtain an additional $100 per K–6 equivalent above the normal expenditure point, up to $1,000 per K–6 equivalent | K–6 | $100/ | 0.36 | 0.36 | $100/ | 0.50 | 0.50 |
| | 7–8 | assessed | 0.11 | 0.11 | assessed | 0.16 | 0.16 |
| | 9–12 | value per | 0.24 | 0.24 | value per | 0.34 | 0.34 |
| | unified | pupil | 0.71 | 0.71 | pupil | 1.00 | 1.00 |
| Additional tax rate to obtain an additional $100 per K–6 equivalent above $1,000 per K–6 equivalent | K–6 | $100/ | $100/ | 0.36 | $100/ | $100/ | 0.50 |
| | 7–8 | assessed | assessed | 0.11 | assessed | assessed | 0.16 |
| | 9–12 | value per | value per | 0.24 | value per | value per | 0.34 |
| | unified | pupil | pupil | 0.71 | pupil | pupil | 1.00 |

## TABLE IV-4

## FACTORS USED TO DETERMINE GRANTS RELATIVE TO GRANT FOR A K-6 PUPIL*

| Kind of average daily attendance | Number of K–6 equivalents |
|---|---|
| Regular kindergarten through 6th grade | 1.00 |
| Regular 7th and 8th grades | 1.15 |
| Regular 9th through 12th grade | 1.25 |
| Classes for adults | 1.00 |
| (Physically handicapped) | |
| Hearing handicapped | 4.40 |
| Vision handicapped | 4.40 |
| Orthopedic—other health impaired | 3.40 |
| Aphasic | 4.40 |
| Deaf-blind multihandicapped | 10.30 |
| Other multihandicapped | 6.20 |
| Pregnant minors | 1.50 |
| Regular day classes | 2.00 |
| Remedial physical education | 2.00 |
| Other remedial instruction—speech | 4.30 |
| Individual instruction | 2.70 |
| (Mentally retarded) | |
| Educable | 2.10 |
| Trainable | 3.10 |
| (Educationally handicapped) | |
| Special day classes | 3.10 |
| Learning disability groups | 4.30 |
| Home and hospital instruction | 2.70 |

* These factors are those recommended by the State Board of Education.

The second major difference between FSA and DPE is that from the third year on FSA would not allow any district to spend less than $700 per K-6 equivalent. Under FSA as under DPE the normal expenditure level of $700 would require a $4.00 tax rate in a unified district. We recommend, though, that the minimum tax rate under FSA be $3.00 in the first year for the $500 minimum expenditure level (instead of $2.50 under DPE) since the minimum per pupil expenditure will rise to $700 within three years and hence the minimum tax rate will rise to $4.00.

As under DPE, local wealth will support noncategorical expenditures above $700 per K-6 equivalent in the first year or above $1,000 per K-6 equivalent in the second year. Except for these instances where high spending districts may use local wealth in the first two years, all expenditures are fully wealth equalized under both FSA and DPE.

Starting in the third year when the FSA plan is fully phased-in, all districts will receive a minimum of $700 per K-6 equivalent for the minimum unified tax rate of $4.00. Districts with 1970–71 expenditure levels above $700 per K-6 equivalent may continue to spend up to their current expenditure level and will receive an additional $100 per K-6 equivalent for each $.71 in tax rate increase (for a unified district). Pre-

viously high-spending districts tended to be high-wealth districts. Since only previously high-spending districts can spend above $700 per K-6 equivalent under FSA, our simulations show that the State can nearly break even by requiring only a $.71 tax increase for each extra $100 per K–6 equivalent rather than the $1.00 tax increase required under DPE for every $100 of extra expenditure above $700.

How would our proposals diminish disparities in expenditure among school districts? The answer is somewhat different for FSA and DPE. FSA, unlike DPE, would prohibit districts which had previously been spending more than $700 per K-6 equivalent (in 1970–71 dollars) from increasing their level of noncategorical expenditure beyond what it had been in that year. However, all other districts will be permitted to increase their levels of expenditure to keep up with inflation. This will be achieved by simply shifting the whole schedule upward. Thus if the rate of inflation were 5 percent between year one and year two, then the basic minimum grant under FSA would rise from $500 to $630 instead of just $600. Likewise, 5 percent inflation between year one and year two would push the $700 normal expenditure level up to $735. Thus inflation would eventually let the low spending districts catch up with the high spending districts under FSA. The State Board of Education has recommended that the allowance for inflation be agreed upon each year by the Department of Education, the Department of Finance, and the Legislative Analyst. This would seem to be a reasonable procedure.

Reduction of the "wrong kind" of wealth-related expenditure differentials would occur under DPE as districts responded to the non-linearity of the proposed DPE schedule. At expenditures below the normal expenditure point of $700 per K-6 equivalent, the State offers strong inducement for districts to raise their investments in education, because relatively high expenditure increases are associated with given amounts of local tax rate increase. Beyond the normal expenditure point, the incentive decreases, for the allowable expenditure increase associated with given tax rate increases is made deliberately smaller (see Figure IV-2). Thus, districts are encouraged to move up to the $700 level if they are below it but not to increase their expenditures further if they are beyond it; indeed, high-spending districts would possibly see fit gradually to move back toward the normal expenditure point.

Finally, we propose that the DPE schedule, like the FSA one, be adjusted for price level changes and in the same manner. This step would not serve to reduce expenditure differences, but it is a necessary procedure to maintain quality of education in California.

Although the limitation of data required us to base our simulations upon average daily attendance, we think that in practice it would be profitable to use enrollment instead. The justification is that students cost districts money whether or not they are in attendance each day. Teachers are under contract, other personnel must be paid, and supplies are ordered on the basis of enrollment, not average attendance. Traditional wisdom has held ADA to be an incentive for educators to encourage students to attend school. In fact, it probably is a weak incentive, especially as it does not operate very directly on some of the key individuals involved, namely, principals and teachers. Besides, choice of ADA over enrollment works to the disadvantage of large city districts where attendance in relation to enrollment is low.

Similarly, although our definition of K–6 equivalents allocates more money to students at higher grade levels, there is no real educational justification for this. At present, high school programs do cost more than elementary programs, mainly because high school students receive more specialized kinds of instruction than do elementary students. However, since learning is cumulative, a strong argument can be made for spending relatively more resources at lower grade levels. We have preserved the traditional higher weighting of students at higher grade levels only because to do otherwise would cause excessive disruption in ongoing programs. But as explained in Chapter III, we have recommended that funds for compensatory education be concentrated on children at the lowest grade levels. This compromise will move in the direction of an educationally justifiable allocation of resources, without causing any disruption.

In allocating money for noncategorical expenditure under the FSA or DPE plan, we apply the weighting in Table IV-4 on special and handicapped students throughout the whole range of permissible expenditure. This approach differs from that taken by the Board of Education, which would apply the weightings on special and handicapped students only to the allocation of the basic minimum grants. That is, a blind child in the Board of Education plan would receive 4.4 times as much as a regular K–6 child for the basic minimum grant, but if his district imposed a local tax rate to obtain more money under the DPE schedule, the blind child would not have his grant raised at all. We find this approach to be inconsistent. If a district is willing to tax itself to improve

the quality of its program, that improvement should be available to all students.

### *Simulation Procedure*

Simulation of the proposed FSA and DPE formulas consisted of estimating what level of expenditure and tax rate each district would have chosen in 1970–71 if the first-year or third-year schedules had been in effect that year. For DPE the pattern of local response would determine the total cost to the State of the new program, because the net subsidy to any district would depend on the tax rate chosen by the district. Therefore, in simulating DPE we made a range of assumptions about the pattern of local response to the new formula, to obtain high, low, and medium estimates of the total cost to the State. This was not necessary in simulating FSA, however, because the third-year FSA schedule was designed in such a way that the cost to the State would not be very sensitive to the pattern of district response.

To simulate FSA, districts were divided into two groups, according to whether 1970–71 noncategorical expenditure per K–6 equivalent was greater or less than $700. Since $700 becomes the minimum expenditure level in year 3, all districts spending less than $700 in 1970–71 would move up to $700 by that year.

For districts with 1970–71 noncategorical expenditure greater than $700 per K–6 equivalent, we first computed the tax rate that would be required in year 3 to maintain the 1970–71 spending level. For districts which had no more than about $17,500 in assessed valuation per pupil, the tax rate required to maintain a 1970–71 spending level above $700 under FSA would actually be less than the actual 1970–71 tax rate. These high-spending, moderate-to-low wealth districts were assumed to reduce their tax rates in year 3 to the point where they would just maintain their 1970–71 spending levels, because the FSA rules would not permit them to raise their expenditures above the 1970–71 level. So moderate-to-low wealth districts which spend more than $700 per K–6 equivalent in 1970–71 would simply maintain their 1970–71 spending levels in year 3. The corresponding tax rates follow from Table IV-3.

The remaining districts are those which spent more than $700 per K–6 equivalent in 1970–71, and which were wealthy enough to have a 1970–71 tax rate lower than that which would be required under FSA to keep their 1970–71 spending levels in year 3. These districts were assumed, somewhat arbitrarily, to raise their tax rates only by half the difference between the actual 1970–71 tax rate and the tax rate required in year 3 to maintain the 1970–71 level of spending. Thus the tax rate in year 3 for high-spending, high-wealth districts would be the average of the 1970–71 tax rate and the tax rate required to maintain 1970–71 expenditures.

Simulation of DPE was different from FSA because for each district we made not one but three predictions, in order to obtain high, low, and medium estimates of the total cost to the State. The first step was the same all three times: calculate the tax rate that would be required in year 3 to maintain the 1970–71 level of noncategorical expenditure per K-6 equivalent. If this is less than the actual 1970–71 tax rate, then it is very unlikely (though not inconceivable) that a district would have reduced its tax rate *below* the point necessary to maintain the 1970–71 spending level. Nor is it probable that a district would actually *raise* its tax rate beyond the 1970–71 point if just maintaining the same tax rate would mean higher expenditures. Similarly, in a district that would have to raise its tax rate to maintain its current expenditures, opposing forces within the district would probably compromise on some tax increase and some expenditure reduction. *Most likely, the tax rate chosen would be somewhere between the actual rate in 1970–71 and the rate that would be required to maintain the 1970–71 level of expenditure.*

This assumption underlies our computation of the minimum, maximum, and medium likely cost to the State. In effect we computed for each district the amount of State subsidy to which it would be entitled if, on the one hand, it kept its 1970–71 tax rate (call this $t_a$), or, on the other hand, it taxed itself at the rate required to maintain its 1970–71 level of noncategorical expenditure (call this $t_e$). In general a wealthy district receives less subsidy at higher tax rates (a very wealthy district actually receives a negative subsidy), and a poor district receives more subsidy at higher tax rates. Therefore the minimum likely cost to the State was computed by setting the new tax rates equal to the greater of $t_a$ and $t_e$ in wealthy districts, and setting them equal to the lesser of $t_a$ and $t_e$ in low-wealth districts. We denote this set of new tax rates as DPEmin. DPEmax is the set of new tax rates that would maximize the likely cost to the State: for wealthy districts it contains the smaller of $t_a$ and $t_e$, and for low-wealth districts the larger of $t_a$ and $t_e$. Finally, DPEmed is the set of new tax rates that would give a middle-range estimate of how much the DPE program would cost the State. For all districts the DPEmed tax rate is simply the average of the two likely extreme tax rates, $t_a$ and $t_e$.

Setting each district's new tax rate halfway between the existing tax rate and the tax rate required

to maintain existing expenditures gives only one of the many possible patterns of response to DPE. We do not pretend that it is the single most likely response. For one thing, this response function ignores the difference in slope of the DPE schedule below and above $700 per K-6 equivalent, which of course is essential to the design of the program. There is no way to predict the single most likely pattern of local response to a DPE formula, or to any new formula which preserves local option over the size of the budget. Some studies have experimented with statistical techniques to find how a school district's tax rate and expenditures depend on the preferences of the school board, which in turn depends on the characteristics of local voters. However, the 1970 Census data on characteristics of school districts did not become available in time for us to do this kind of analysis. Moreover, our main purpose was to show the range of uncertainty in the outcome of DPE, in the absence of direct constraints upon the response of local districts.

In practice, the Legislature could reduce the range of uncertainty simply by forbidding any district to change its tax rate or expenditures by more than a certain amount each year. And, in running our simulation of DPEmed, we did in fact impose one such constraint, which would require "maintenance of effort" by districts. That is, *no district in which the 1970–71 tax rate was less than the tax rate at the normal point ($4.00 in unified districts, $2.63 in K-8 districts, $1.37 in 9–12 districts) would be permitted to reduce its tax rate.* This constraint was applied to the simulation of DPEmed, but not to DPEmax or DPEmin.

Our simulations make two further assumptions. First, local school boards are assumed to ignore the impact of any new non-property taxes on their districts. Conceivably, local taxpayers might consider property taxes imposed for local schools equivalent to state income and sales taxes which also support local schools. However, we assume that local school boards take the opposite view: that a dollar raised from state income and sales taxes and paid out in state school aid is "free" money, unlike local property tax revenues which are "costly" for school boards to raise. Thus our simulations count as local tax effort only the property tax rates, including the minimum imposed by the State, but not the additional state income and sales tax rates required to fund the program.

A second additional assumption is that local school boards do not count compensatory education funds as part of the money available for noncategorical expenditure. As argued in Chapter III, these funds have a specific purpose, and districts will be expected to show they are complying with this purpose. Therefore we have been consistent by assuming in the simulations that a district's choice of expenditure for noncategorical purposes will be independent of the amount it would receive for compensatory education.

### *Simulated Results of FSA and DPE Proposals*

Table IV-5 shows the simulated effects of the FSA and DPE proposals in Table IV-3 on total property taxes and noncategorical expenditures for the State as a whole. The total cost to the state budget for each program is shown in column (5) of Table IV-5. Cost to the State is the total increase in expenditure plus the total decrease in property taxes. The last column of Table IV-5 does not include the $500 million for new compensatory education or the $435 million for the circuit-breaker. But it does include the additional state revenues required by the new categorical grants for transportation, existing debt service, new construction,[5] food services and children's centers. These new categorical programs were assumed simply to have reimbursed each district for its actual 1970–71 expenditure—or, in the case of existing debt srevice, to have reimbursed the proportion shown in Table IV-2. Therefore the cost to the State of these new categorical aids would be represented in Table IV-5 as reduction of local property taxes

The range of uncertainty in estimating the cost to the State of DPE in year 3 is about $424 million. This range is large enough to justify the State in setting limits on how much any district may change its rate and expenditure level each year. By such statutory devices the Legislature could directly influence the pattern of taxes and expenditures resulting from the new program. Alternatively, the State could require all school districts to submit estimated budgets one year in advance. The Legislature could then anticipate the net requirement for state revenues. This procedure was recommended by the Board of Education.

The third-year results for DPEmed are the numbers reported in Chapter I, Table I-3. Reduction of school property taxes would have given $24 million of general tax relief, and noncategorical expenditures would have risen by $334 million in 1970–71. Table I-3 also shows the results of FSA in year 3: $234 million of general tax relief and $183 million of additional noncategorical expenditure.

[5] As explained above, the cost to the State of paying for the approved cost of new construction would be met by selling state bonds. Therefore the amount of local property taxes presently levied to pay for construction will become part of the cost to the State—but to be funded by State bonds, not by current state revenues. Available data make it impossible to separate out the amount of local property taxes levied for new construction. Therefore, by including this amount, Tables IV-5 and I-3 overstate the *current* cost to the State of the new proposals.

## TABLE IV-5

## SIMULATED EFFECTS OF DPE AND FSA ON TOTAL LOCAL PROPERTY TAXES, TOTAL NONCATEGORICAL EXPENDITURE, AND COST TO THE STATE, IN MILLIONS OF 1970–71 DOLLARS

| | Total local property taxes | | Total noncategorical expenditure | | Cost to the state |
|---|---|---|---|---|---|
| | Amount (1) | Change from actual (2) | Amount (3) | Change from actual (4) | (5)=(4)−(2) |
| Actual 1970–71 | $2,732 | | $3,755 | | |
| FSA year 3 | 2,498 | −234 | 3,938 | 183 | 417 |
| DPEmed year 1 | 2,569 | −163 | 4,026 | 271 | 434 |
| year 3 | 2,708 | −024 | 4,089 | 334 | 358 |
| DPEmin year 3 | 2,706 | −26 | 3,854 | 99 | 125 |
| DPEmax year 3 | 2,540 | −192 | 4,112 | 357 | 549 |

Note: As defined above, DPEmin and DPEmax are the simulations providing the extreme estimates of minimum and maximum cost to the state. DPEmed is the simulation based on district tax rates midway between these two extremes.

## TABLE IV-6

## DISTRICT POWER EQUALIZING PLAN (DPEmed Response Function)

| District name | Number of pupils | Assess value /pup | Total 70–71 exp/ pupil | 70–71 tax rate | First year grant /pup | Yr 1 comp ed /pup | Total yr 1 res /pup | First year tax rate | Long run grant /pup | L. run comp ed /pup | Total L. run res/ pupil | Long run tax rate | Change in resources ($ mil) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | 1st yr | L. run |
| Oakland City Unified | 63,256 | 15,755 | 1,226 | 4.7410 | 915 | 106 | 1,332 | 4.7247 | 902 | 212 | 1,425 | 4.8392 | 6.87 | 11.61 |
| Lake Tahoe Unified | 3,536 | 25,486 | 1,272 | 3.8570 | 761 | 38 | 1,163 | 4.5035 | 801 | 77 | 1,242 | 4.7901 | −0.97 | −0.95 |
| Blue Lake Union Elementary | 435 | 18,465 | 613 | 1.8160 | 545 | 81 | 771 | 1.8160 | 545 | 163 | 853 | 1.8160 | 0.07 | 0.10 |
| McKinleyville Elementary | 1,611 | 5,140 | 683 | 2.5930 | 759 | 72 | 966 | 2.5930 | 759 | 145 | 1,039 | 2.5930 | 0.46 | 0.57 |
| South Humboldt Unified | 1,267 | 15,222 | 1,136 | 4.4520 | 827 | 50 | 1,196 | 4.3754 | 821 | 101 | 1,241 | 4.3969 | 0.09 | 0.14 |
| Greenfield Union Elementary | 3,292 | 5,388 | 708 | 2.6144 | 723 | 72 | 982 | 2.6144 | 723 | 145 | 1,055 | 2.6144 | 0.90 | 1.14 |
| Kern County High | 20,927 | 31,141 | 1,148 | 2.3104 | 1,018 | 41 | 1,374 | 1.7803 | 1,044 | 82 | 1,441 | 1.7803 | 8.18 | 9.59 |
| Lakeside Union Elementary | 249 | 95,819 | 1,413 | 1.1497 | 596 | 98 | 887 | 2.0294 | 853 | 196 | 1,242 | 3.4744 | −0.34 | −0.60 |
| Panama Union Elementary | 2,353 | 15,171 | 797 | 3.0887 | 682 | 38 | 953 | 2.4599 | 689 | 76 | 998 | 2.4875 | 0.59 | 0.69 |
| Hanford High | 2,613 | 29,111 | 1,044 | 2.1000 | 969 | 52 | 1,261 | 1.6496 | 992 | 104 | 1,336 | 1.6496 | 0.91 | 1.11 |
| Lemoore Union High | 1,571 | 35,441 | 1,170 | 1.8885 | 943 | 42 | 1,368 | 1.5273 | 946 | 85 | 1,414 | 1.5273 | 0.51 | 0.58 |
| Lakeport Unified | 1,219 | 13,300 | 914 | 4.0048 | 808 | 44 | 1,007 | 4.0048 | 808 | 89 | 1,052 | 4.0048 | 0.11 | 0.17 |
| Antelope Valley High | 6,969 | 45,158 | 1,297 | 2.0630 | 1,089 | 29 | 1,419 | 1.8567 | 1,065 | 58 | 1,424 | 1.8810 | 1.50 | 1.46 |
| Long Beach Unified | 67,370 | 16,565 | 1,012 | 4.0627 | 794 | 49 | 1,060 | 4.1284 | 794 | 98 | 1,109 | 4.1284 | 2.50 | 5.80 |
| Los Angeles Unified | 691,433 | 13,358 | 1,004 | 4.7664 | 819 | 72 | 1,140 | 4.3062 | 814 | 144 | 1,207 | 4.3062 | 136.54 | 182.87 |
| Norwalk-La Mirada Unified | 32,937 | 6,352 | 821 | 5.5300 | 815 | 52 | 1,017 | 4.3562 | 833 | 105 | 1,088 | 4.3562 | 8.91 | 11.25 |
| Soledad-Agua Dulce Elementary | 492 | 42,534 | 1,194 | 2.7269 | 703 | 20 | 1,037 | 2.9497 | 776 | 41 | 1,131 | 3.3825 | −0.12 | −0.17 |
| Sulphur Springs Elementary | 2,326 | 12,710 | 914 | 3.5886 | 704 | 40 | 928 | 2.9934 | 804 | 80 | 1,068 | 3.2253 | 0.21 | 0.47 |
| Temple City Unified | 4,823 | 10,878 | 1,072 | 5.8290 | 947 | 37 | 1,163 | 5.3131 | 953 | 74 | 1,206 | 5.2904 | 0.71 | 0.93 |
| Whittier City Elementary | 6,232 | 18,503 | 833 | 2.8959 | 713 | 40 | 912 | 2.5464 | 730 | 80 | 969 | 2.6250 | 0.90 | 1.16 |
| Whittier Union High | 15,689 | 27,424 | 1,076 | 2.6168 | 1,044 | 19 | 1,258 | 2.0160 | 1,101 | 39 | 1,335 | 2.0105 | 5.44 | 6.67 |
| Chowchilla Union High | 645 | 40,607 | 1,247 | 2.2470 | 1,127 | 54 | 1,394 | 2.0154 | 1,110 | 108 | 1,431 | 2.0375 | 0.16 | 0.17 |
| Tamalpais Union High | 6,038 | 56,769 | 1,536 | 2.2641 | 1,319 | 24 | 1,599 | 2.1936 | 1,238 | 49 | 1,543 | 2.3842 | 0.62 | −0.37 |
| Weaver Union Elementary | 823 | 17,691 | 842 | 2.5700 | 709 | 84 | 1,116 | 2.5700 | 709 | 169 | 1,201 | 2.5700 | 0.23 | 0.30 |
| Alisal Union Elementary | 2,198 | 7,877 | 690 | 3.1780 | 688 | 80 | 870 | 3.1780 | 687 | 161 | 950 | 2.8102 | 0.40 | 0.64 |
| Carmel Unified | 3,186 | 33,693 | 1,240 | 2.9964 | 739 | 27 | 989 | 3.9760 | 829 | 55 | 1,107 | 4.6739 | −1.85 | −2.22 |
| LaGunita Elementary | 21 | 52,704 | 1,215 | 2.0540 | 692 | 44 | 802 | 2.5910 | 350 | 88 | 1,064 | 3.6208 | −0.01 | −0.02 |
| Pacific Grove Unified | 3,844 | 11,213 | 971 | 5.2340 | 870 | 34 | 1,063 | 4.6952 | 872 | 69 | 1,100 | 4.6942 | 0.59 | 0.73 |
| Salinas City Elementary | 6,680 | 17,623 | 870 | 3.7804 | 779 | 72 | 929 | 3.2899 | 845 | 145 | 1,068 | 3.5176 | 0.97 | 1.63 |
| Anaheim City Elementary | 14,182 | 27,245 | 891 | 3.4259 | 771 | 27 | 902 | 3.0598 | 798 | 54 | 956 | 3.3621 | 1.57 | 1.17 |
| Fullerton High | 15,179 | 36,613 | 1,285 | 2.5709 | 1,176 | 21 | 1,456 | 2.1566 | 1,182 | 42 | 1,483 | 2.1531 | 4.90 | 5.33 |
| Santa Ana Unified | 28,117 | 13,756 | 874 | 4.2381 | 778 | 60 | 981 | 3.9203 | 778 | 121 | 1,042 | 3.9203 | 4.24 | 5.95 |
| Savanna Elementary | 2,831 | 9,422 | 724 | 3.0679 | 709 | 36 | 866 | 3.0679 | 687 | 73 | 881 | 2.7573 | 0.40 | 0.56 |
| Seal Beach Elementary | 1,153 | 56,798 | 1,119 | 2.1612 | 706 | 16 | 855 | 2.5214 | 821 | 32 | 986 | 3.1701 | −0.54 | −0.81 |
| Auburn Union Elementary | 1,998 | 16,615 | 800 | 2.7737 | 682 | 57 | 918 | 2.3817 | 692 | 114 | 985 | 2.4333 | 0.37 | 0.48 |
| Desert Center Unified | 1,029 | 21,810 | 1,350 | 5.2400 | 1,048 | 62 | 1,330 | 5.6064 | 1,010 | 125 | 1,355 | 6.2636 | −0.10 | −0.22 |
| Perris Elementary | 1,054 | 11,613 | 997 | 2.5710 | 613 | 141 | 1,121 | 2.5710 | 665 | 283 | 1,315 | 2.5710 | 0.13 | 0.34 |
| Del Paso Heights Elementary | 1,753 | 3,234 | 1,105 | 3.8500 | 632 | 193 | 1,313 | 2.9025 | 791 | 386 | 1,665 | 3.1642 | 0.42 | 1.02 |
| Grant Joint Union High | 14,673 | 10,913 | 925 | 2.5720 | 986 | 50 | 1,188 | 1.9863 | 1,115 | 101 | 1,368 | 1.9710 | 4.80 | 7.46 |
| Natomas Union Elementary | 128 | 99,321 | 1,811 | 1.6390 | 618 | 96 | 1,456 | 2.2397 | 808 | 193 | 1,743 | 3.2899 | −0.12 | −0.22 |
| Sacramento City Unified | 56,812 | 8,706 | 863 | 5.1730 | 818 | 53 | 1,065 | 4.1290 | 822 | 107 | 1,123 | 4.1290 | 16.64 | 19.94 |
| San Benito High | 1,279 | 58,542 | 1,285 | 1.7228 | 1,100 | 30 | 1,290 | 1.7638 | 1,063 | 61 | 1,284 | 1.8827 | −0.02 | −0.13 |
| San Diego City Unified | 133,003 | 10,757 | 938 | 4.7016 | 829 | 50 | 1,053 | 4.3077 | 831 | 101 | 1,106 | 4.3077 | 18.27 | 25.32 |
| San Francisco Unified | 80,559 | 28,426 | 1,744 | 4.0295 | 1,077 | 93 | 1,485 | 5.2643 | 1,102 | 187 | 1,604 | 6.8349 | −49.14 | −75.52 |
| Lincoln Unified | 5,209 | 8,068 | 814 | 5.3286 | 821 | 23 | 971 | 4.2930 | 831 | 47 | 1,005 | 4.2930 | 1.25 | 1.43 |
| Siskiyou Union High | 1,211 | 36,198 | 1,350 | 2.0600 | 1,098 | 24 | 1,416 | 1.9388 | 1,103 | 49 | 1,446 | 1.9309 | 0.13 | 0.17 |
| Keyes Union Elementary | 547 | 4,980 | 735 | 2.5600 | 707 | 156 | 1,090 | 2.5600 | 707 | 313 | 1,247 | 2.5600 | 0.19 | 0.28 |
| Modesto City High | 8,139 | 25,599 | 1,230 | 2.7900 | 1,094 | 35 | 1,424 | 2.1622 | 1,180 | 70 | 1,545 | 2.1365 | 2.89 | 3.93 |

TABLE IV-7

## FULL STATE ASSUMPTION PLAN

| District Name | No. of Pupils | Assess Value /Pup | 70-71 Grant /Pup | Total 70-71 Exp/ Pupil | 70-71 Tax Rate | Long Run Grant /Pup | L. Run Comp Ed /Pup | Total L. Run Res /Pup | L. Run Debt Tax Rate | Long Run Tax Rate | Change in Resources ($ mil) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Oakland City Unified | 63,256 | 15,755 | 914 | 1,226 | 4.7410 | 912 | 212 | 1,455 | 0.0675 | 4.6889 | 13.74 |
| Lake Tahoe Unified | 3,536 | 25,486 | 908 | 1,27[illegible] | 3.8570 | 791 | 77 | 1,232 | 0.6932 | 4.6932 | −0.90 |
| Blue Lake Union Elementary | 435 | 18,465 | 468 | 643 | 1.8160 | 727 | 163 | 1,035 | 0.0495 | 2.6795 | 0.11 |
| McKinleyville Elementary | 1,611 | 5,140 | 548 | 683 | 2.5930 | 768 | 145 | 1,048 | 0. | 2.6300 | 0.58 |
| South Humboldt Unified | 1,267 | 15,222 | 816 | 1,136 | 4.4520 | 814 | 101 | 1,234 | 0.1717 | 4.2932 | 0.15 |
| Greenfield Union Elementary | 3,292 | 5,388 | 520 | 708 | 2.6144 | 727 | 145 | 1,059 | 0. | 2.6300 | 1.15 |
| Kern County High | 20,927 | 31,141 | 832 | 1,148 | 2.3104 | 891 | 82 | 1,288 | 0. | 1.3700 | 9.06 |
| Lakeside Union Elementary | 249 | 95,819 | 1,220 | 1,413 | 1.1497 | 808 | 196 | 1,197 | 0. | 3.0217 | −0.50 |
| Panama Union Elementary | 2,353 | 15,171 | 564 | 797 | 3.0887 | 723 | 76 | 1,032 | 0.0187 | 2.6487 | 0.71 |
| Hanford High | 2,613 | 29,111 | 804 | 1,044 | 2.1000 | 888 | 104 | 1,232 | 0. | 1.3700 | 1.05 |
| Lemoore Union High | 1,571 | 35,441 | 787 | 1,170 | 1.8885 | 888 | 85 | 1,356 | 0. | 1.3700 | 0.58 |
| Lakeport Unified | 1,219 | 13,300 | 759 | 914 | 4.0048 | 818 | 89 | 1,062 | 0.0629 | 4.0629 | 0.17 |
| Antelope Valley High | 6,969 | 45,158 | 996 | 1,297 | 2.0630 | 995 | 58 | 1,354 | 0.0516 | 1.6197 | 1.79 |
| Long Beach Unified | 67,370 | 16,565 | 795 | 1,012 | 4.0627 | 797 | 98 | 1,112 | 0.1434 | 4.1434 | 5.84 |
| Los Angeles Unified | 691,433 | 13,358 | 754 | 1,004 | 4.7664 | 792 | 144 | 1,185 | 0.1010 | 4.1010 | 186.61 |
| Norwalk-La Mirada Unified | 32,937 | 6,352 | 671 | 821 | 5.5300 | 794 | 105 | 1,049 | 0. | 4.0000 | 10.71 |
| Soledad-Agua Dulce Elementary | 492 | 42,534 | 880 | 1,194 | 2.7269 | 766 | 41 | 1,121 | 0.4153 | 3.2407 | −0.14 |
| Sulphur Springs Elementary | 2,326 | 12,710 | 729 | 914 | 3.5886 | 728 | 80 | 992 | 0. | 2.6300 | 0.46 |
| Temple City Unified | 4,823 | 10,878 | 892 | 1,072 | 5.8290 | 891 | 74 | 1,144 | 0.0418 | 4.5489 | 1.02 |
| Whittier City Elementary | 6,232 | 18,503 | 674 | 833 | 2.8959 | 746 | 80 | 985 | 0.0656 | 2.6956 | 1.18 |
| Whittier Union High | 15,689 | 27,424 | 881 | 1,076 | 2.6168 | 879 | 39 | 1,113 | 0. | 1.3945 | 5.84 |
| Chowchilla Union High | 645 | 40,607 | 1,034 | 1,247 | 2.2470 | 1,032 | 108 | 1,353 | 0.0231 | 1.7038 | 0.21 |
| Tamalpais Union High | 6,038 | 56,769 | 1,280 | 1,536 | 2.2641 | 1,280 | 49 | 1,585 | 0.0519 | 2.1950 | 0.53 |
| Weaver Union Elementary | 823 | 17,691 | 518 | 842 | 2.5700 | 731 | 169 | 1,223 | 0.0395 | 2.6695 | 0.30 |
| Alisal Union Elementary | 2,198 | 7,877 | 587 | 690 | 3.1780 | 712 | 161 | 975 | 0. | 2.7484 | 0.70 |
| Carmel Unified | 3,186 | 33,693 | 1,017 | 1,240 | 2.9964 | 800 | 55 | 1,078 | 0.2614 | 4.3753 | −2.00 |
| LaGunita Elementary | 21 | 52,704 | 1,089 | 1,215 | 2.0540 | 833 | 88 | 1,047 | 0. | 3.2555 | −0.02 |
| Pacific Grove Unified | 3,844 | 11,213 | 812 | 971 | 5.2340 | 811 | 69 | 1,039 | 0.0443 | 4.1229 | 0.74 |
| Salinas City Elementary | 6,680 | 17,623 | 791 | 870 | 3.7804 | 790 | 145 | 1,013 | 0.0333 | 3.0087 | 1.86 |
| Anaheim City Elementary | 14,182 | 27,245 | 786 | 891 | 3.4259 | 784 | 54 | 942 | 0.0725 | 2.9510 | 2.56 |
| Fullerton High | 15,179 | 36,613 | 1,026 | 1,285 | 2.5709 | 1,024 | 42 | 1,325 | 0.0160 | 1.6355 | 5.81 |
| Santa Ana Unified | 28,117 | 13,756 | 730 | 874 | 4.2381 | 797 | 121 | 1,061 | 0.0451 | 4.0451 | 6.00 |
| Savanna Elementary | 2,831 | 9,422 | 602 | 724 | 3.0679 | 735 | 73 | 929 | 0. | 2.6622 | 0.69 |
| Seal Beach Elementary | 1,153 | 56,798 | 985 | 1,119 | 2.1612 | 804 | 32 | 969 | 0.0696 | 2.9588 | −0.70 |
| Auburn Union Elementary | 1,998 | 16,615 | 621 | 800 | 2.7737 | 741 | 114 | 1,034 | 0.0272 | 2.6572 | 0.51 |
| Desert Center Unified | 1,029 | 21,810 | 1,130 | 1,350 | 5.2400 | 1,027 | 125 | 1,372 | 0.4971 | 5.8650 | −0.12 |
| Perris Elementary | 1,054 | 11,613 | 630 | 997 | 2.5710 | 726 | 283 | 1,376 | 0. | 2.7289 | 0.38 |
| Del Paso Heights Elementary | 1,753 | 3,234 | 616 | 1,105 | 3.8500 | 738 | 386 | 1,612 | 0. | 2.6300 | 0.96 |
| Grant Joint Union High | 14,673 | 10,913 | 772 | 925 | 2.5720 | 891 | 101 | 1,144 | 0. | 1.3700 | 5.14 |
| Natomas Union Elementary | 128 | 99,321 | 1,069 | 1,811 | 1.6390 | 774 | 193 | 1,709 | 0.1015 | 2.9743 | −0.18 |
| Sacramento City Unified | 56,812 | 8,706 | 668 | 863 | 5.1730 | 808 | 107 | 1,109 | 0. | 4.0000 | 19.78 |
| San Benito High | 1,279 | 58,542 | 1,125 | 1,285 | 1.7228 | 1,087 | 61 | 1,308 | 0.0077 | 1.7949 | −0.02 |
| San Diego City Unified | 133,003 | 10,757 | 783 | 958 | 4.7016 | 799 | 101 | 1,074 | 0.0187 | 4.0187 | 25.20 |
| San Francisco Unified | 80,559 | 28,426 | 1,429 | 1,744 | 4.0295 | 1,095 | 187 | 1,597 | 0.3304 | 6.0764 | −58.72 |
| Lincoln Unified | 5,209 | 8,068 | 686 | 814 | 5.3286 | 798 | 47 | 972 | 0. | 4.0000 | 1.38 |
| Siskiyou Union High | 1,211 | 36,198 | 1,056 | 1,350 | 2.0600 | 1,053 | 49 | 1,396 | 0.0242 | 1.6853 | 0.22 |
| Keyes Union Elementary | 547 | 4,980 | 508 | 735 | 2.5600 | 723 | 313 | 1,263 | 0. | 2.6300 | 0.29 |
| Modesto City High | 8,139 | 25,599 | 935 | 1,230 | 2.7900 | 933 | 70 | 1,298 | 0. | 1.4507 | 3.34 |

Tables IV-6 and IV-7 show the simulated results of DPE and FSA for a sample of districts selected to cover the whole range of wealth, expenditure, size, and geographical location. (Results for all school districts comprise Volume II of this Report.) The column headings in Table IV-6 are defined as follows:

Items marked by an asterisk are given precise definition in Appendix IV-A.

1. *Number of pupils* is ADA attending in the district.

2. *Assessed value per pupil* is modified assessed value * divided by ADA.

3. *Total 1970–71 expenditure per pupil* is total expenditures * per ADA from all funds, excluding that made from the sale of bonds * and including net increase in cash balances *.

4. *1970–71 tax rate* is the *total tax rate* * levied in the district for grades K–12, in dollars per $100 of modified assessed value.

5. *First year grant per pupil* is the amount per ADA received by the district for general noncategorical purposes in the first year of the new program. The tax rate levied to obtain this grant is based upon the first year schedule.

6. *Year 1 comp ed (compensatory education grant) per pupil* is the district's per pupil share of the first year's $250 million compensatory education program.

7. *Total 1st year resources per pupil* is the sum of the first year noncategorical and compensatory education grants, plus continuing and new state categorical programs, federal aid for other than state programs, and existing debt service per student.

8. *First year tax rate* is the tax rate levied to receive the basic grant plus the debt service tax rate (if any) required by the new formula in Table IV-2.

9. *Long run grant per pupil* is the noncategorical grant per pupil the district receives in the third year. The tax rate levied to receive this grant is based upon the third year (i.e., fully phased-in) schedule.

10. *Long run comp ed per pupil* is the district's per pupil share of the fully funded $500 million compensatory education program in the third year.

11. *Total long run resources per pupil* is the sum of the third year noncategorical and compensatory education grants plus continuing and new state categorical programs, federal aid for other than state programs, and debt service per student.

12. *Long run tax rate* is the tax rate levied to receive the basic grant plus the debt service tax rate (if any) required by the new formula in Table IV-2.

13. *Change in resources (first year or long run)* is the change in the fiscal status of a district due to both the change in tax rate and change in expenditures. It is equal to the (new total resources per pupil minus the old total expenditures per pupil) times the number of students, minus (new taxes levied minus old taxes levied).

Table IV-7 uses the following set of column headings: (Items defined above have not been redefined here. Items marked by an asterisk are given precise definitions in Appendix IV-A.)

1. *Number of pupils.*

2. *Assessed value per pupil.*

3. *1970–71 grant per pupil* represents the amount of 1970–71 noncategorical expenditure, to be compared with the noncategorical grant provided by the new FSA program. It is defined as total 1970–71 expenditure per pupil (as defined above), minus: continuing State categorical aid *, federal aid for other than State programs *, and 1970–71 expenditure for debt service *, transportation *, non-bonded construction *, food services *, and children's centers *.

4. *Total 1970–71 expenditure per pupil.*

5. *1970–71 tax rate.*

6. *Long run grant per pupil.*

7. *Long run comp ed (compensatory education grant) per pupil.*

8. *Total long run resources per pupil.*

9. *Long run debt (service) tax rate* is the local tax rate to pay for the district's share of its 1970–71 debt service * (see Table IV-2).

10. *Long run tax rate.*

11. *Change in resources* (long run).

To understand how the new formulas affect any district, the first thing to look at in these tables is the "1970–71 grant per pupil" in Table IV-7. This is the actual amount of noncategorical expenditure per unweighted ADA in 1970–71. In Los Angeles this amount was $754. For a typical unified district Figure IV-2 shows the level of noncategorical expenditure at the normal expenditure point to be $776 per pupil. Los Angeles therefore spent less than the amount at the normal expenditure point, so the tax rate required to maintain existing expenditures in Los Angeles (which is not shown in the tables) would have been less than the tax rate at the normal expenditure point. However, the actual 1970–71 tax rate in Los Angeles was 4.741, which is greater than the tax rate at the normal expenditure point.

Therefore under FSA Los Angeles would simply move up to the normal expenditure point, as Table IV-7 reveals. The noncategorical grant would be $700 per K–6 equivalent, which turns out to be $792 per unweighted ADA because, when the weightings in Table IV-4 are applied, the ratio of K–6 equivalents to unweighted ADA turns out to be 792 to 700, or 1.13 to 1. Adding in categorical and compensatory education grants brings total expenditure to $1185 per unweighted ADA. The total new tax rate would be $4.00 plus the debt service tax rate required according to the formula in Table IV-2, which is 0.101. Thus FSA would have raised total expenditures from $1004 to $1185 per unweighted ADA, while reducing the tax rate from 4.766 to 4.101. The combined effect of tax relief and higher spending amounted to more than $186 million in net benefit for Los Angeles from FSA.

Table IV-6 shows what DPE would have done. The new tax rate in each district is halfway between the 1970–71 tax rate and the tax rate required to maintain 1970–71 expenditures, except that in districts where this median tax rate is less than the 1970–71 tax rate, and the 1970–71 tax rate is less than that at the normal expenditure point, the new tax rate is kept equal to the 1970–71 tax rate. In Los Angeles the new tax rate would be 4.306, which is larger than the 4.101 under FSA. Total expenditure in the third year would become $1,207, compared to $1,185 under FSA. The net change in resources would be about $183 million.

In reading Tables IV-6 and IV-7 it is important to bear in mind that the FSA and DPE tax rates are different for elementary, high school, and unified districts. Furthermore, the amount of the noncategorical grants per pupil in a district depends on the compo-

sition by grade level of the district's ADA, and on the number of special students. These factors and adjustments are all spelled out in Tables IV-3 and IV-4.

Table IV-8 shows the flow of funds between different groups of districts that would have resulted from DPE in year 3, based on the DPEmed response function. For each group of districts Table IV-8 shows the net change in resources per ADA. Net change in resources is the increase in total expenditure, including the new compensatory education programs, minus any increase in property taxes. For the state as a whole, the new compensatory education programs would provide $500 million of increased expenditure. The DPE program itself, as Table IV-5 showed, would have raised noncategorical spending by $334 million and reduced property taxes by $24 million. Thus the total change in resources for all districts would have been $859 million. This does not include the $435 million net cost of the circuit breaker, which provides property tax relief not in the form of savings to school districts, but rather as direct reimbursement

## TABLE IV-8

## NET CHANGE IN RESOURCES DUE TO DPE IN YEAR 3 (DPEmed Response Function): BY SIZE, WEALTH, EXPENDITURE LEVEL, AND TYPE OF DISTRICT

Each cell shows: number of districts
total ADA
net change in resources per ADA

### Elementary Districts

| | More than $16,490 assessed value per ADA | | $10,566 to $16,490 assessed value per ADA | | Less than $10,566 assessed value per ADA | | |
|---|---|---|---|---|---|---|---|
| | More than $861 per ADA total 1970–71 expenditure | Less than $861 per ADA total 1970–71 expenditure | More than $861 per ADA total 1970–71 expenditure | Less than $861 per ADA total 1970–71 expenditure | More than $861 per ADA total 1970–71 expenditure | Less than $861 per ADA total 1970–71 expenditure | Row total |
| More than 9,013 ADA | 7<br>79,052<br>$83 | 1<br>9,756<br>$73 | 7<br>95,056<br>$253 | 4<br>44,661<br>$200 | 3<br>42,111<br>$348 | 7<br>96,305<br>$303 | 29<br>366,941<br>$230 |
| 3,452 to 9,013 ADA | 18<br>92,283<br>$112 | 2<br>10,610<br>$79 | 10<br>57,211<br>$310 | 11<br>64,137<br>$235 | 7<br>35,480<br>$242 | 18<br>97,181<br>$286 | 66<br>356,902<br>$226 |
| Less than 3,452 ADA | 273<br>113,233<br>$−388 | 149<br>56,449<br>$157 | 16<br>15,131<br>$232 | 93<br>86,061<br>$283 | 13<br>17,052<br>$338 | 72<br>72,115<br>$305 | 616<br>360,041<br>$57 |
| Column total | 298<br>284,568<br>$−95 | 152<br>76,815<br>$136 | 33<br>167,398<br>$271 | 108<br>194,859<br>$249 | 23<br>94,643<br>$307 | 97<br>265,601<br>$298 | 711<br>1,083,884<br>$171 |

### High School Districts

| | More than $36,613 assessed value per ADA | | $27,424 to $36,613 assessed value per ADA | | Less than $27,424 assessed value per ADA | | |
|---|---|---|---|---|---|---|---|
| | More than $1155 per ADA total 1970–71 expenditure | Less than $1155 per ADA total 1970–71 expenditure | More than $1155 per ADA total 1970–71 expenditure | Less than $1155 per ADA total 1970–71 expenditure | More than $1155 per ADA total 1970–71 expenditure | Less than $1155 per ADA total 1970–71 expenditure | Row total |
| More than 14,958 ADA | 2<br>30,581<br>$337 | 1<br>14,958<br>$247 | none | 2<br>36,616<br>$444 | none | 4<br>97,454<br>$405 | 9<br>179,612<br>$389 |
| 7,746 to 14,958 ADA | 6<br>32,441<br>$100 | none | 5<br>54,593<br>$277 | 3<br>26,603<br>$411 | 2<br>17,427<br>$377 | 1<br>14,673<br>$508 | 17<br>175,707<br>$264 |
| Less than 7,746 ADA | 43<br>62,130<br>$−6 | 12<br>12,929<br>$607 | 10<br>26,788<br>$191 | 10<br>29,088<br>$358 | 6<br>10,214<br>$444 | 11<br>28,690<br>$439 | 92<br>169,839<br>$236 |
| Column total | 51<br>155,155<br>$104 | 13<br>27,887<br>$414 | 15<br>81,381<br>$249 | 15<br>92,307<br>$408 | 8<br>27,641<br>$402 | 16<br>140,817<br>$423 | 118<br>525,158<br>$298 |

TABLE IV-8—(Continued)

## NET CHANGE IN RESOURCES DUE TO DPE IN YEAR 3 (DPEmed Response Function): BY SIZE, WEALTH, EXPENDITURE LEVEL, AND TYPE OF DISTRICT

Each cell shows: number of districts
total ADA
net change in resources per ADA

Unified Districts

| | More than $13,358 assessed value per ADA | | $8,775 to $13,358 assessed value per ADA | | Less than $8,775 assessed value per ADA | | |
|---|---|---|---|---|---|---|---|
| | More than $1004 per ADA total 1970–71 expenditure | Less than $1004 per ADA total 1970–71 expenditure | More than $1004 per ADA total 1970–71 expenditure | Less than $1004 per ADA total 1970–71 expenditure | More than $1004 per ADA total 1970–71 expenditure | Less than $1004 per ADA total 1970–71 expenditure | Row total |
| More than 63,256 ADA | See below* | none | none | (San Diego) 1<br>133,003<br>$190 | none | none | 5<br>1,035,621<br>$145 |
| 16,536 to 63,256 ADA | 3<br>80,615<br>$72 | 2<br>51,628<br>$162 | 2<br>79,106<br>$131 | 9<br>224,166<br>$208 | 3<br>112,561<br>$377 | 13<br>475,019<br>$295 | 32<br>1,023,095<br>$249 |
| Less than 16,536 ADA | 77<br>256,954<br>$−273 | 26<br>64,973<br>$135 | 16<br>72,827<br>$79 | 36<br>203,311<br>$252 | 6<br>44,073<br>$219 | 42<br>383,821<br>$279 | 203<br>1,025,959<br>$110 |
| Column total | 84<br>1,240,187<br>$49 | 28<br>116,601<br>$148 | 18<br>151,933<br>$106 | 46<br>560,480<br>$220 | 9<br>156,634<br>$333 | 55<br>858,840<br>$288 | 240<br>3,084,675<br>$168 |
| *Cell in upper left contains | Los Angeles<br>691,433<br>$265 | San Francisco<br>80,559<br>$−94 | Long Beach<br>67,370<br>$86 | Oakland<br>63,256<br>$184 | | | |

to low- and moderate-income households. With a total state ADA of 4,693,717 in 1970–71, the average change in resources would have been $183 per pupil.

The most important finding in Table IV-8 is that the DPE and compensatory education programs would indeed have redistributed resources from wealthy to poor school districts. This of course is the only way to comply with *Serrano*. The redistribution from rich to poor districts would offset the pattern of existing expenditures, in which wealthy districts have a pronounced tendency to spend more money. For example, in elementary districts with more than $16,490 assessed valuation per ADA, pupils in districts spending more than $861 per ADA in 1970–71 outnumbered those in districts spending less, by 284,568 to 76,815. In elementary districts with less than $10,566 assessed valuation per ADA, pupils receiving low expenditures outnumbered those receiving high expenditures by 265,601 to 94,643. The DPE program compensates for this by contributing substantially more per ADA to the poor districts than to the wealthy ones.

Table IV-8 also seems to show that high school districts do significantly better than elementary and unified districts. High school students on average benefit from a $298 net increase in resources, while pupils in elementary and unified districts received only $171 and $168 respectively. This indicates that high school students may be getting too much weight when they are counted as 1.25 K–6 equivalents. The question of weighting by grade level was discussed above and in Chapter III. There is no really compelling educational justification for spending relatively more money on older students. Table IV-8 may indicate that a weight of 1.25 is larger than necessary to prevent disruption of existing programs.

With regard to district size, Table IV-8 shows that the smallest, high-spending, wealthy districts are the only group that does not receive a positive change in resources. The reason is that tax rates in these districts rise significantly. If the Legislature feels inclined to protect these small districts, they can make adjustments for "necessary small schools," as is done in both the present foundation program and the power-equalizing plan proposed by the Board of Education.

The five biggest districts as a group do rather well in the new program. Los Angeles, San Diego, and Oakland all receive more than the average amount of increased resources per ADA. San Francisco apparently loses money because the tax rate increases, but to the extent that San Francisco is inhabited by households with low and moderate incomes, the cir-

cuit breaker will pay back a substantial portion of the increased taxes. *Given a circuit breaker, it is quite conceivable that San Francisco as a whole would break even.* (See Table IV-12 below.)

Finally, Table IV-9 shows the actual flow of funds through school districts in 1970–71, and the changes resulting from third-year DPE or FSA. The circuit breaker does not appear in this table because it goes to households, not to school districts. Amounts such as sale of bonds, categorical expenditures, and federal aid are assumed not to change under the new programs. This is in keeping with the nature of these simulations, which were designed to show what would have happened in 1970–71 if the new programs had already been in effect, rather than trying to project what would actually happen if the programs took effect three years from now.

Either of the new programs would have increased the amount of state aid, thus raising both total expenditures and the state share. Total state aid would have gone up by 58 percent under DPE, or by 62 percent under FSA. As a result, total expenditure would have been 17 percent greater with DPE, 14 percent with FSA. Where the State actually contributed 30 percent of total revenues in 1970–71, it would have put in 41 percent if DPE had been in effect, 43 percent if FSA. Thus the proposed DPE and FSA programs, despite their significant differences, show strong similarity in their probable impact on the size and state-local composition of school revenues. Either program would require a substantial increase in the state's contribution, in order to meet *Serrano's* demands for equalization without destroying programs in high-spending districts.

TABLE IV-9

TOTAL INCOME AND EXPENDITURES OF SCHOOL DISTRICTS UNDER ACTUAL AND PROPOSED PROGRAMS, IN MILLIONS OF 1970–71 DOLLARS

| | Actual 1970-71 | DPE year 3 | FSA year 3 |
|---|---|---|---|
| **Income** | | | |
| Property taxes | $2,732 | $2,708 | $2,498 |
| Total state aid | 1,481 | 2,339 | 2,398 |
| Total federal aid | 310 | 310 | 310 |
| Sale of bonds | 148 | 148 | 148 |
| Cafeteria sales | 126 | 126 | 126 |
| Other local non-tax income | 106 | 106 | 106 |
| Total | $4,903 | $5,737 | $5,586 |
| **Expenditures** | | | |
| Noncategorical expenditure | $3,755 | $4,089 | $3,938 |
| Continuing state categorical programs (See Table IV-1) | 45 | 45 | 45 |
| Continuing federal categorical programs (See Table IV-1) | 182 | 182 | 182 |
| Transportation | 81 | 81 | 81 |
| Construction | 228 | 228 | 228 |
| Food services | 182 | 182 | 182 |
| Children's centers | 32 | 32 | 32 |
| Debt service | 334 | 334 | 334 |
| Compensatory education | 0 | 500 | 500 |
| Increase in cash balances | 64 | 64 | 64 |
| Total | $4,903 | $5,737 | $5,598 |

### *Progressive DPE: Inadequate Substitute for the Circuit-Breaker*

District power equalizing is designed to make school expenditure independent of district wealth. At the same time, an overriding objective of any public finance reform is to avoid increasing the burden on low-income people. These two objectives conflict because there are some low-income people who reside in wealthy districts. In the eight-county sample of school districts described in Appendix IV-B, the correlation between total district assessed valuation per pupil and household income per pupil is only .097 in high school districts, .250 in elementary districts, and .784 in unified districts. (Income was estimated by the procedure described in Chapter II, Table II-11.)

Table IV-10 illustrates the effect of DPE on the bottom quartile of homeowners in the eight-county sample: these are homeowners assessed at $4,376 or less. Nearly half of these low-wealth households experience an increase in school tax rates. About 14 percent of them would suffer property rate increases greater than $2.50 per $100 of assessed value. Most of these 14 percent live in San Francisco, where DPE would raise the school tax rate by $2.81, from $4.03 to $6.84. (The new tax rate under DPEmed, it will be recalled, is halfway between the existing tax rate and the tax rate required to maintain the existing level of expenditure.)

TABLE IV-10

DISTRIBUTION OF LOWEST-QUARTILE SINGLE-FAMILY HOUSES (ASSESSED VALUE LESS THAN $4,376) BY AMOUNT OF CHANGE IN SCHOOL DISTRICT TAX RATE DUE TO ORDINARY DPE

| Increase in tax rate | Number of homes | Percent of homes | Mean assessed value |
|---|---|---|---|
| More than $3.00 | 71 | 0 | $3,528 |
| $2.50 to 3.00 | 30,512 | 15 | 3,812 |
| 2.00 to 2.50 | 374 | 0 | 3,130 |
| 1.50 to 2.00 | 2,443 | 1 | 2,866 |
| 1.00 to 1.50 | 8,286 | 4 | 3,863 |
| 0.50 to 1.00 | 12,126 | 6 | 2,511 |
| 0 to 0.50 | 46,759 | 22 | 3,605 |
| −0.50 to 0 | 40,572 | 19 | 3,678 |
| −1.00 to −0.50 | 35,251 | 17 | 3,729 |
| −1.50 to −1.00 | 33,884 | 16 | 3,830 |
| −2.00 to −1.50 | 202 | 0 | 4,316 |
| −2.50 to −2.00 | 0 | 0 | -- |
| −3.00 to −2.50 | 0 | 0 | -- |
| less than −3.00 | 0 | 0 | -- |

The circuit-breaker described in Chapter II would offset this tax increase for low income households—renters as well as homeowners. However, if the Legislature did not wish to implement a circuit-breaker, then the DPE plan might be modified to afford some protection to low-income households living in property-rich districts. More precisely, since any DPE program distributes resources to districts rather than to individual households, modification of DPE would benefit any district which contains low-income households.

The following five plans illustrate how DPE might be modified to reduce the extra burden on low-income people in property-rich districts. We simulated these plans for about a hundred districts in the eight-county sample described in Appendix IV-B. In these simulations we used Table II-4 for estimating household income in a district, based on residential property values. The response functions for individual districts to the hypothetical plans are the same as those we used in simulating ordinary DPE, except that no maintenance-of-effort constraint was imposed on districts presently spending at less than the normal expenditure level.

1. *Progressive DPE.* One way to reduce the burden on low-income people who inhabit property-rich districts would be to let the DPE schedule reflect the income per pupil in each district. For a district in which the amount of household income per pupil was the same as the state average, the DPE schedule would be the same as before, in Table IV-3. This schedule allows a unified district to obtain $200 per K–6 equivalent above the $500 minimum by imposing an additional tax rate of $1.50 per $100 of modified assessed valuation (25 percent of true value). Under progressive DPE, in a unified district in which the amount of income per pupil was only half the state average for unified districts, the additional tax rate to get $200 above the $500 minimum would be only half of $1.50, or $0.75. Thus low-income families in property-rich districts (indeed, in all districts) would be better off than under ordinary DPE.

2. *Progressive DPE with split roll.* An undesirable consequence of progressive DPE would be that industrial and commercial enclaves in low-income districts would also benefit from lower tax rates than under ordinary DPE. Such selective tax relief for nonresidential property would be unjustified. One way to avoid this problem is to tax all nonresidential property at a uniform statewide rate. Then the progressive DPE schedule would apply only to residential property in each district. We have simulated a version of this plan that uses a statewide tax rate of $3.50 on nonresidential property.

This plan also imposes a minimum tax rate on residential property that is just large enough so that the total combined yield of the separate statewide taxes on residential and nonresidential property will be the same as the yield from the $2.50 minimum rate in the original DPE plan. The purpose here is to separate the cost to the State into two components. The first component is the difference between the total amount guaranteed in the form of minimum grants, and the yield from the minimum tax. The second is the amount of state revenues needed to support the power-equalized program. Since the aim here is to compare variants of DPE, the variants are designed so that the minimum-grant component of the cost to the State is the same for each variant as for the original DPE plan.

3. *Ordinary DPE with split roll.* For purposes of comparison, we also simulated a plan that would tax nonresidential property at a statewide rate of $3.50 and would apply the original DPE schedule to residential property alone.

4. *Income-based DPE, with split roll.* We have also constructed a DPE schedule that would use a local income tax instead of the residential property tax, and would tax nonresidential property at a uniform $3.50 rate statewide. Although this plan actually gives no special protection to low-income people in rich districts, it does have the theoretical advantage of using income rather than assessed value as a direct measure of ability to pay. This plan may also have the practical advantage of being a way to preserve local fiscal options if the Watson Initiative passed.

5. *Progressive DPE using an index based on residential property instead of income.* This is the same as progressive DPE, except that the DPE schedule is adjusted according to the amount of residential property per pupil in a district, instead of household income per pupil. The comparison will show how sensitive are the simulated results of progressive DPE to the numbers in the conversion Table II-4, which we used to estimate household income based on residential property value.

One finding from the simulations is immediately evident: in those plans which levy the local tax only on households, the statewide tax on nonresidential property would have to be higher than $3.50. The $3.50 rate results in a huge transfer of tax burden from nonresidential property onto the State budget. In this eight-county sample, the existing system of finance in 1970–71 raised 41 percent of all State and local revenues for schools from nonresidential prop-

erty taxes. Another 38 percent came from taxes on residential property, and the State paid the remaining 21 percent of the non-federal revenues out of general State taxes. This distribution of the State and local burden in the eight-county sample did not change significantly in the simulation of ordinary DPE or those variants which imposed the local taxes on *all* property. (These simulations left out the proposed new money for compensatory education, which of course would increase the State share; see Table IV-9 above.) However, in those plans which did split the property tax roll, and which imposed a $3.50 statewide tax on nonresidential property, the State share increased to about 44 percent, and the share paid by nonresidential property fell to 21 percent. Thus to avoid reducing the share paid by nonresidential property would require a statewide nonresidential tax rate of about $7.00.

How do progressive DPE and splitting the tax roll affect the distribution of tax rates and expenditure among districts? There is no universal answer to this question, because there are an infinite number of specific permutations of DPE. We reduced the number by designing the variations here in such a way that each of the modified DPE formulas is equivalent to the original DPE formula—in the specific sense that the tax payment required to obtain a given *increment* in district expenditure, for a homeowner with average income and assessed value, would be the same under each of the different formulas. This definition of equivalence demanded that the minimum tax rate on residential property be less under the split-roll formulas than under the formulas which imposed the local tax rate on all property.

Thus the split-roll formulas imposed only a $1.74 minimum residential tax rate in unified districts, as opposed to the $2.50 minimum under ordinary DPE. Consequently, the split-roll formulas are more generous. Table IV-11 shows that school districts obtained higher expenditures and lower tax rates under the split-roll formulas. However, this is obviously not a necessary outcome of any split-roll formula.

A more general and important result is that the progressive DPE formulas do not really protect low-income households. Table IV-11 shows that Oakland, Berkeley, and San Francisco would all have had higher tax rates and lower expenditures under the progressive DPE formulas than under ordinary DPE, whether the local tax rate applied to all property or to residential alone. The reason is simply that the average estimated income per pupil in each of these districts exceeded the average for all unified districts in the sample, which was $17,250 per K-6 equivalent. It is possible that the procedure for estimating household income overstated the amount of income in these districts relative to the rest of the sample. In any case, using average income per pupil in a district presumably would not help these three cities as much as using the actual proportion of low-income households to adjust the DPE schedule. Using average income per pupil did help John Swett Unified, but not very much.

Since progressive DPE apparently would not protect San Francisco at all, it is obvious that the circuit-breaker would be preferable for San Francisco. Table IV-12 illustrates the amount of tax relief the circuit-breaker would provide for hypothetical homeowners and tenants at various income levels. Since DPE

TABLE IV-11

SIMULATED EFFECTS OF DPE AND THREE VARIANTS IN FIVE UNIFIED DISTRICTS FROM THE EIGHT-COUNTY SAMPLE

| Wealth per K-6 Equivalent: total assessed value, residential assessed value, estimated household income. | | Noncategorical Expenditure per K-6 Equivalent, and School Property Tax Rate: | | | | |
|---|---|---|---|---|---|---|
| | | actual 1970-71 | ordinary DPE | progressive DPE | split-roll DPE | progressive split-roll DPE |
| Oakland | $12,002 | $787 | $777 | $774 | $818 | $814 |
| | 6,790 | 4.74 | 4.84 | 4.86 | 4.43 | 4.46 |
| | 17,617 | | | | | |
| Berkeley | 15,143 | 1,199 | 1,091 | 1,019 | 1,135 | 1,042 |
| | 10,080 | 6.97 | 8.05 | 9.63 | 7.60 | 9.30 |
| | 25,638 | | | | | |
| San Francisco | 24,610 | 1,231 | 950 | 925 | 1,004 | 946 |
| | 13,210 | 4.03 | 6.84 | 9.30 | 6.29 | 8.94 |
| | 29,740 | | | | | |
| Piedmont | 13,970 | 867 | 839 | 772 | 879 | 779 |
| | 13,750 | 5.17 | 5.45 | 7.11 | 5.04 | 6.97 |
| | 35,337 | | | | | |
| John Swett | 37,217 | 1,006 | 813 | 814 | 853 | 858 |
| | 6,260 | 3.26 | 5.20 | 5.09 | 4.78 | 4.67 |
| | 16,510 | | | | | |

TABLE IV-12

## COMPARATIVE EFFECTS OF THE CIRCUIT-BREAKER AND PROGRESSIVE DPE ON HYPOTHETICAL HOMEOWNERS AND TENANTS IN SAN FRANCISCO

| | Homeowner assessed at $3,500[1], with annual income of | | | Tenant paying $1,500 annual rent net of property tax, with income of | | |
|---|---|---|---|---|---|---|
| | $6,000 | $8,000 | $10,000 | $6,000 | $8,000 | $10,000 |
| Property taxes paid | | | | | | |
| Actual[2] | $448 | $448 | $448 | $375 | $375 | $375 |
| DPE[3] | 547 | 547 | 547 | 457 | 457 | 457 |
| DPE with Circuit-Breaker[4] | 372 | 481 | 547 | 332 | 410 | 457 |
| Progressive DPE[5] | 634 | 634 | 634 | 529 | 529 | 529 |

Notes:
[1] Assessed value is net of $750 homeowner's exemption.
[2] For homeowners, actual tax payment is based on the total 1970–71 property tax rate in San Francisco, which was $12.82 per $100 of assessed value. For tenants, taxes paid are assumed to be 20 percent of rent including tax, which is $1,875.
[3] Simulation shows DPE would raise the tax rate in San Francisco by $2.81, which is a 21.9 percent increase over 1970–71 total of $12.82. Non-school tax rates are assumed not to change. Tenants as well as homeowners are assumed to bear the full amount of the tax increase.
[4] Proportion reimbursed by the State is from Table II-2. For tenants, computed tax payment is 20 percent of rent including tax, which would now be $1,957. The $6,000 tenant is reimbursed 32 percent of 20 percent of $1,957, which is $125; he then pays $457−$125 = $332.
[5] Simulation shows progressive DPE would raise San Francisco's total tax rate by $5.27 or 41.1 percent; full amount is assumed to be paid by both homeowners and tenants.

would raise the tax rate, all of these hypothetical San Franciscans would pay more taxes. And progressive DPE would be even worse. However, the circuit-breaker in the form we propose would mitigate the tax increase from DPE for both tenants and homeowners with income less than $10,000. For households earning less than about $7,200, the circuit-breaker would more than completely offset the 21.9 percent tax increase from DPE. Thus direct tax relief to households who need it most can avoid making low-income taxpayers pay the price for rectifying inequities between school districts.

## APPENDIX IV-A

# DEFINITION OF INCOME AND EXPENDITURE ACCOUNTS

Total expenditures (excluding outgoing transfers) (983 [1] minus 975, all funds [2]).

Sales of bonds (585, fund 3).

Change in balance (ending minus beginning balance) (998 minus 220, all funds).

Modified assessed value (215, fund 0).

Total tax rate (tax numbers 1–12, 14–30 [3]).

Total debt service (960, funds 1 and 2; 954, fund 3).

State categorical aid (515 minus 390, fund 1; plus 515, other funds; plus $\frac{1}{4}$ of 385, fund 1).

Federal categorical aid (270, 320, 340, 360, and $\frac{3}{4}$ of 385, fund 1; minus 230, fund 1; plus all federal aid, other funds).

Continuing state categorical aid (425, 440, 445, 450, 455, 475, fund 1).

New state categorical programs: transportation (803, fund 1; 779, fund 3), non-bonded construction [4] (921, 924, 927, all funds; minus 585, fund 3), food services (833, fund 1; 983 minus 972, fund 6), children's centers (983, fund 1; minus (975, 921, 924, 927), fund 7).

Federal aid for other than state programs (270, 320, 340, 360, $\frac{3}{4}$ of 385, fund 1; plus 320, fund 8) minus (230, 235, 240, 245, 260, 310, 325, 330, 360, 375, 836, 839, 842, fund 1)

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[1] Numbers in parentheses refer to EDP line numbers, Department of Education Form J-41, revised 2-71.

[2] "All fund" refers to funds 1-8. Fund 1 is the general fund.

[3] Tax numbers refer to Form J-29B, revised 7-70.

[4] Construction refers to the purchase of sites, improvement of sites, and purchase of buildings. Equipment is not included in construction.

## APPENDIX IV-B

# DERIVATION OF DATA ON COMPOSITION OF THE SECURED PROPERTY ROLL FOR THE EIGHT-COUNTY SAMPLE

From the State Board of Equalization and with the permission of the respective county assessors, we obtained a condensed version of the secured roles for the counties of Alameda, Contra Costa, Kern, Marin, San Francisco, San Mateo, Santa Barbara, and Santa Clara. This data enabled us to determine for each parcel of property: (1) the appropriate school district, (2) the net assessed value, and (3) the use code classification.

Net assessed value is the sum of the land, improvement, and personal property values minus all the exemptions which are not reimbursable by the State, such as those for veterans, churches, private schools below college grade, hospitals, and charitable properties. The homeowners and business inventory exemptions are not included since the State reimburses the local school districts for nearly all of the tax loss attributable to these exemptions.

For each county we classified property according to a set of 11 to 14 use code categories, which are listed in Table IV-B-1. Each county maintains a use code classification system. Unfortunately, these systems are not consistent among counties. Also, it is difficult to categorize many parcels because they serve multiple purposes, such as a house with a store in front. However, we were primarily interested in determining the amount of nonresidential and residential property by school district, and in forming these aggregations of the inaccuracies canceled out. This data also enabled us to examine the distribution of residential property by school district, and was used to obtain the income estimate discussed in Chapter II and IV.

TABLE IV-B

## COUNTY USE CODES

| | Alameda | Contra Costa | Kern | Marin | San Francisco | San Mateo | Santa Barbara | Santa Clara |
|---|---|---|---|---|---|---|---|---|
| I. Residential Property | | | | | | | | |
| 1. Vacant Single Family Residential | x | x | | x | | | | |
| 2. single family residential | x | x | x | x | x | x | x | x |
| 3. vacant multiple | x | x | | x | | | | |
| 4. multiple family residential | x | x | x | x | x | x | x | x |
| 5. vacant residential | | | x | | x | x | x | x |
| 6. rural property—residential | | | x | x | | | | |
| II. Non-Residential Property | | | | | | | | |
| 7. vacant commercial | x | x | x | x | x | x | x | x |
| 8. commercial | x | x | x | x | x | x | x | x |
| 9. vacant industrial | x | x | x | x | x | x | x | x |
| 10. industrial | x | x | x | x | x | x | x | x |
| 11. vacant rural property | x | x | x | | x | x | x | x |
| 12. rural property—farm use | x | x | | | | | | |
| 13. rural property—nonfarm use | x | x | | | | | | |
| 14. farm property | | | x | x | | x | x | x |
| 15. vacant partially tax exempted properties | | | | x | x | | | |
| 16. partially tax exempted properties | x | x | x | x | x | x | x | x |
| 17. miscellaneous | | x | x | | x | x | x | |
| III. State and Government Property | | x | x | x | x | | x | x |

## CHAPTER V

# ENROLLMENT FORECASTS

As between the 1960's and the 1970's, a major shift in the educational environment has occurred, namely, that the pressure on the system of rising student enrollments has subsided. We have already commented on how this fact should shift the emphasis in the preparation of school district operating budgets from accommodation of growth in student populations to a search for greater teacher productivity. With respect to school construction, needs for new buildings will be determined primarily by intra-state shifts in school population, not by a general rise in numbers of youth to be educated; hence, the State properly should play a greater role now than in the past in determining size and location of new facilities. Otherwise, over capacity may exist in certain school districts. In some cases, districts which have over capacity now are sharing facilities under various kinds of lease arrangements, and we believe our finance proposals will make inter-district transfers of students even more feasible to arrange in the future. However, it would be better to avoid over capacity in the first instance.

Our projected enrollments in high, median, and low estimates are shown on Chart V-1. Because we feel the shift in demand for student places is of major importance for educational policy, we provide the following explanation of our procedures and we present our results now in somewhat greater detail.

### *Procedures*

In order to properly understand and interpret the meaning of our California enrollment forecasts, it is necessary to discuss briefly the nature of the model we used to obtain them.

The student flow model [1] is a general mathematical device which abstractively views the flow of people in a system as a movement through a series of stations or cells. Associated with each station are a set of rates which describe the admission of people into the station from other stations within the system. Additionally, if needed in a particular analysis, the model allows capacity limits to be put on any station so that the number of people who would normally enter the station exceeds that capacity, then the excess are transferred automatically to another designated station. When applied to enrollment forecasting, the stations of the model might be, for example, grade or groups of grades in the school system. The capacities find use in representing school enrollment limitations. These ideas will be explained more concretely in the analyses below.

The population forecast was made under the assumption that net in-migration to the State would be about 25,000 in 1971, would rise to 90,000–100,000 in 1975, and then level off at about 150,000 people per year from 1980 on.

For our California enrollment forecasts, we have divided schools in any given area into Public, Parochial, and Non-Parochial Private schools. Each of these three systems is considered to be graded from kindergarten to the twelfth grade. We did not include pre-kindergarten in our forecasts. The statewide forecast is divided between Northern and Southern California. The Southern counties are Imperial, Los Angeles, Orange, Riverside, San Bernardino, San Diego, Santa Barbara, and Ventura. Using enrollments and numbers of graduates for the school years 1970–71 and 1971–72, along with populations for each age for these years, we estimated rates of admission into each of these school systems, and rates of promotion, repetition, and transfer within and between school systems. Finally, using the same data, we estimated

[1] A complete mathematical description of this model is given in G. B. Kleindorfer, P. Goldfinger, and S. Rhoads, "A Model for Educational Planning for the State of New York," a report prepared for the New York State Commission on the Cost, Quality, and Financing of Elementary and Secondary Education (Fleischmann), 1971.

TABLE V-1

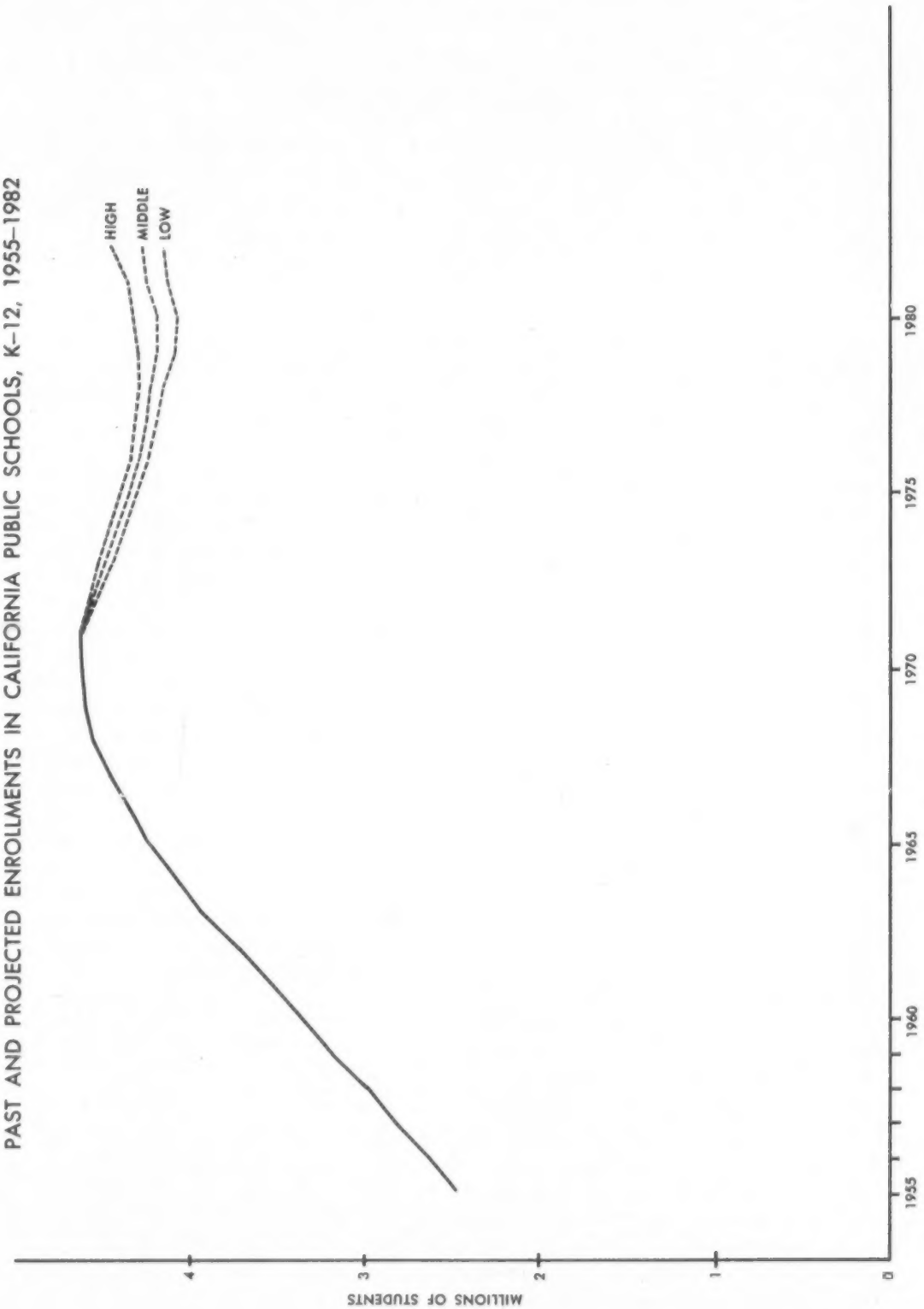
## PUBLIC SCHOOL ENROLLMENT FORECASTS, TOTALS FOR GRADES K–12, HIGH, MIDDLE, AND LOW PROJECTIONS

(Figures in Thousands)

| | State Total | | | Southern California | | | Northern California | | |
|---|---|---|---|---|---|---|---|---|---|
| Year | Middle | High | Low | Middle | High | Low | Middle | High | Low |
| 1971 | 4,600 | 4,600 | 4,600 | 2,636 | 2,636 | 2,636 | 1,964 | 1,964 | 1,964 |
| 1972 | 4,539 | 4,546 | 4,524 | 2,601 | 2,604 | 2,589 | 1,938 | 1,942 | 1,935 |
| 1973 | 4,476 | 4,490 | 4,444 | 2,565 | 2,571 | 2,540 | 1,911 | 1,919 | 1,904 |
| 1974 | 4,407 | 4,430 | 4,360 | 2,528 | 2,539 | 2,492 | 1,879 | 1,891 | 1,868 |
| 1975 | 4,339 | 4,371 | 4,277 | 2,491 | 2,507 | 2,444 | 1,848 | 1,864 | 1,833 |
| 1976 | 4,281 | 4,325 | 4,207 | 2,460 | 2,484 | 2,405 | 1,821 | 1,841 | 1,802 |
| 1977 | 4,243 | 4,300 | 4,158 | 2,442 | 2,476 | 2,379 | 1,801 | 1,825 | 1,779 |
| 1978 | 4,212 | 4,285 | 4,116 | 2,429 | 2,473 | 2,359 | 1,783 | 1,812 | 1,757 |
| 1979 | 4,192 | 4,283 | 4,090 | 2,423 | 2,480 | 2,349 | 1,769 | 1,803 | 1,741 |
| 1980 | 4,191 | 4,305 | 4,086 | 2,428 | 2,501 | 2,352 | 1,763 | 1,804 | 1,734 |
| 1981 | 4,219 | 4,356 | 4,111 | 2,450 | 2,540 | 2,373 | 1,769 | 1,816 | 1,738 |
| 1982 | 4,273 | 4,436 | 4,166 | 2,488 | 2,597 | 2,413 | 1,785 | 1,839 | 1,753 |

CHART V-1

PAST AND PROJECTED ENROLLMENTS IN CALIFORNIA PUBLIC SCHOOLS, K–12, 1955–1982



dropout and graduation rates from each system.[2] These rates constitute a picture of the movement of people into and among the various stations of the model for the above mentioned school years. In what follows, we will call these rates the *base rates.*

***Rates***

Once base year rates are obtained, many different kinds of "simulations" or "experiments" can be undertaken with the model. The admission rates may be used together with population forecasts in order to estimate future new admissions. Then, promotion, transfer, and repetition rates may be used to estimate the number of students at various levels. In any given simulation, these base rates may be changed or capacity limitations may be imposed in order to depict possible future situations which affect school system enrollment.

For each geographic area we performed three forecasting simulations. The summary enrollment predictions are shown in Table V-I. The simulations are each described in Table V-2 where for the public schools they are labeled "high," "medium," and "low." The main problem which had to be faced in order to forecast was that of the future behavior of non-public enrollments. Because of (close to) universal enrollment, any growth or depletion of non-public enrollments will have a direct inverse effect on public school enrollments. The uncertainties in the future of non-public education motivated us to perform three separate forecasts so as to have a band of probable outcomes.

In several places in Table V-2 the phrase, "Extrapolation of 70–71 Rates," occurs. This means that we applied the base rates to the population forecast without any changes in order to obtain the enrollment forecasts. In other places in Table V-2, percentage increases or decreases in capacity are given. The high public school forecast for Alameda County is an example. To obtain that forecast we set decreasing capacity limits of 5 percent a year on parochial schools, and increasing capacity limits of 8 percent a year on non-parochial schools. The effect of this is that enrollments for all schools are still computed in any given year by applying the base rates to the population forecast and to the previous year's enrollments for all schools but then these enrollments are adjusted for each non-public system (by drawing from or contributing to the public system's enrollments) so that parochial schools drop 5 percent a year and non-parochial schools increase 8 percent a year. Where in Table V-2 a zero percent change is shown, the enrollments in that particular system are held constant. In summary we are treating future public school enrollments as dependent variables to be determined by population forecasts, by past rates of movement (the base rates), and by estimated non-public enrollment behavior (used in setting capacity limits).

[2] A detailed description of the method used to estimate the rates is given in P. Goldfinger, G. B. Kleindorfer, and S. Rhoads, "Estimating Transition Rates in a Student Flow Model Using the Transportation Algorithm," a paper delivered at the Operations Research Society of America, Western Regional Conference, Lake Tahoe, February 1972, obtainable from the authors, at the Division of Policy Planning and Administration, School of Education, University of California, Berkeley.

TABLE V-2

PUBLIC SCHOOL ENROLLMENT FORECASTS BASED ON PROJECTED CHANGES IN NON-PUBLIC ENROLLMENTS

| Public school enrollment forecast | Alameda County | Los Angeles County | San Diego County | San Francisco County | Northern California | Southern California |
|---|---|---|---|---|---|---|
| High | Parochial −5% (a decrease of about 940 students per year) | Parochial −7% (a decrease of about 1,100 students per year) | Parochial −7% (a decrease of about 1,250 students per year) | Parochial −5% (a decrease of about 1,250 students per year) | Parochial −5% (a decrease of about 6,300 students per year) | Parochial −6% (a decrease of about 13,500 students per year) |
| | Other private +8% (an increase of about 240 students per year) | Other private +2% (an increase of about 470 students per year) | Other private +5% (an increase of about 230 students per year) | Other private +5% (an increase of about 250 students per year) | Other private +8% (an increase of about 1,700 students per year) | Other private +3% (an increase of about 1,100 students per year) |
| Medium | Extrapolation of 70–71 Rates | Extrapolation of 70–71 Rates | Extrapolation of 70–71 Rates | Parochial −1% (a decrease of about 250 students per year) | Extrapolation of 70–71 Rates | Extrapolation of 70–71 Rates |
| | | | | Other private +10% (an increase of about 500 students per year) | | |
| Low | Parochial +1% (an increase of about 190 students per year) | Parochial 0% | Parochial +1% (an increase of about 180 students per year) | Parochial +1% (an increase of about 250 students per year) | Parochial 0% | Parochial 0% |
| | Other private +25% (an increase of about 750 students per year) | Other private +6% (an increase of about 1,400 students per year) | Other private +15% (an increase of about 700 students per year) | Other private +20% (an increase of about 1,000 students per year) | Other private +15% (an increase of about 5,300 students per year) | Other private +8% (an increase of about 2,900 students per year) |

We made the estimates about the future of non-public enrollments based upon both historical data (see Table V-3) and a number of conversations with parochial and non-parochial school leaders. The extreme forecasts were set wide enough to include the most likely outcomes under alternative assumptions about state aid, consumer choice, etc.

It is now appropriate to discuss the implications of the enrollment forecasts shown in Table V-1. Even if per pupil costs continue to rise, total educational costs will level off for several years. In addition, requirements for new construction will be for less than in the 1960's.

Perhaps the most obvious conclusion from these forecasts is that there will be little or no demand for new teachers for many years. The State will have to choose between the following alternatives:

1. Continue to graduate at considerable cost trained teachers for whom there are no jobs.
2. Drastically cutback teacher training programs so as to supply at most the number of teachers needed to replace retiring teachers.
3. Use teacher training institutions as teacher retraining schools. This policy would avoid drastic cutbacks in these institutions and at the same time open up teaching positions to relieve teachers being trained.
4. Increase the number of teaching jobs by cutting class size.

TABLE V-3

RECENT CHANGES IN NON-PUBLIC ENROLLMENTS

| Fall 1970–Fall 1971 change in enrollments | Alameda County | Los Angeles County | San Diego County | San Francisco County | Northern California | Southern California |
|---|---|---|---|---|---|---|
| Catholic | −4% (−764 students) | −7½% (−9,606 students) | −6% (−1,308 students) | −½% (−132 students) | −5% (−5,433 students) | −7% (−13,305 students) |
| Total parochial | −.65% (−124 students) | −5% (−8,147 students) | −1.2% (−224 students) | +1.3% (+328 students) | −1½% (−1,961 students) | −4% (−9,696 students) |
| Other private | +15% (+371 students) | +2% (+429 students) | +7½% (+326 students) | +63% (+1,936 students) | +21% (+3,711 students) | +13.7% (1,298 students) |

It is the responsibility of the State to have adequate planning to prevent severe unemployment problems. Concerning teachers, it is a relatively simple matter to predict future demands for new teachers, and it would be possible that the State take action to see that enrollments in teacher training programs were of small enough size that all newly trained teachers could expect to find employment in classrooms in California. This latter action would be an arguably good policy, for presently the State is wasting millions of dollars and thousands of man years training unneeded teachers. The cost of this waste fall on the taxpayers of the State, poor and rich alike.

On the other hand, severe cutbacks in teacher training programs mean that efforts to improve racial balance in school teaching staffs would be badly handicapped just at a time when such efforts are beginning to bear fruit. Under this line of reasoning, the State's role should consist of making information widely available about the state of the teacher market to prospective enrollees in teacher training programs. That is, the State would make known that the chances of a given cohort of enrollees finding employment in teaching might be, say, only in the order of one out of four. This approach would almost surely produce over supply, because private costs to the trainee are low and because people customarily over-estimate their own chances relative to the statistical possibilities. The policy might also reduce quality of applicants to teacher training programs. We raise this issue, but beyond our comments in Chapter III on the State's interest in seeking increases in teacher productivity, we do not find its resolution to be within our terms of reference.

# CHAPTER VI

# AN END NOTE

The contents of this Report are intended primarily to restructure California's school finance system in a fashion consistent with the legal principles announced by the California Supreme Court in *Serrano v. Priest*. However, *Serrano* addresses itself only to the proper role of the state and to the actions of individual school districts. As important as these political units may be for legal and administrative purposes, they and their well being are not ends in themselves. Rather, such governments exist only to ensure justice and promote welfare for people.

Consequently, our proposals attempt consistently to construe public policy for the benefit of the individual and his household. It is for this reason that our preferred financial distribution scheme encourages local citizen choice, that our recommendations for alleviating educational failure focus instructional resources on the basis of a pupil's and his parent's characteristics, that our property tax relief measures are based upon the economic circumstances of an individual's household, and our suggestions for changes in governance procedures rely heavily upon parent participation in school decision-making. In each instance, our intent has been to design governmental arrangements which cater to the unique characteristics and conditions of each pupil, parent, taxpayer, and citizen rather than to stress common decision-making elements which encourage governments unwittingly to lump people into ill-fitting and unwieldy social policy categories.

### *Future Research Needs*

In our efforts to achieve school and school finance reforms which are, insofar as possible, both equitable and tuned to the needs of people, we have been handicapped by an absence of precise information and evidence regarding a number of educationally related phenomena. This is to be expected in any endeavor involving public policy analysis; the state of knowledge is never sufficient to enable one to satisfy every goal. Nevertheless, we feel constrained to illustrate several dimensions upon which added research would greatly facilitate the tasks of our successors.

*The Production of Educational Service.* As we better understand how to adjust the flow of resources to a school district in keeping with the educational needs of its students, it becomes increasingly important to understand the manner in which schools can have differential effects upon children. Presently, the socio-economic origins of a student are the single best predictor of his school performance and adult lifestyle. If schools are ever to serve an effective role in breaking the bond between childhood poverty and lack of adult success, then we must know those features which reinforce and those which counteract failure among poor children.

For example, we understand very little regarding the flow of resources within a school or within a classroom. Is it possible that procedures such as "laning" or "tracking" of pupils, allegedly by ability, have the dysfunctional consequence of depriving slow learning students of the leadership and motivational influence of their faster learning peers? As suggested already by a few completed research studies, can a teacher's low expectation for a student's performance thereafter trigger a self-fulfilling chain of events wherein the child actually achieves poorly, despite having the ability to do better? Can conditions such as these dilute the intended consequences of compensatory education funds such that, regardless of the amount of money spent, no learning improvement occurs? In the event that such hypothetical questions are answered in the affirmative, then many of our present school policies need to be changed.

On the positive side, we need badly to know not simply what teacher status characteristics, e.g., age, sex, years of experience, and education level, but also what teacher behaviors lead to added increments of student performance. The production function and school effectiveness studies we cite in Chapter III are as well conceived as present techniques permit. However, they focus on teachers not teaching, and thus we do not know how to train teachers to enable students to learn. In the event we had this knowledge, public funds for activities such as compensatory education, teacher training, and general instruction would be vastly better spent.

*Governance.* Because education serves the dual function of assisting both individuals and the larger society of which they are a part, it is a difficult endeavor to govern. Any set of educational decision-making arrangements which serve only one of these two parties defaults in its responsibility to the other. The

problem is how to design a governance system which meets the needs of the state and still is responsive to the school's individual clients. Thus, what decisions are best allocated to the state level, which to the local district, and which to the local school? To what degree is ability to levy taxes and control expenditures inevitably tied to decisions about matters such as curriculum, personnel, and instructional methods? In other words, does control follow the dollar? How best can parents be permitted to shape the schooling of their children without violating the needs of the entire state and society? Does one form of finance scheme alter or improve the overall school governance structure relative to another scheme? Answers to questions such as these would have enabled us to design our particular governance and finance proposals with a firmer hand.

*Economics.* There are many dimensions on both the revenue generation and financial distribution side which are perplexing and badly in need of additional analyses. For example, the incidence of various taxes and combinations of taxes is not yet well understood. In the absence of such precise knowledge, an analyst is handicapped in arriving at an equitable revenue raising scheme. Similarly, the effects of a statewide property tax are not easily seen. Will such a tax relax the present resistance to social class integration of neighborhoods? Will it create greater resistance to school expenditures?

Another large area of ignorance concerns the manner in which households and school districts will respond to District Power Equalizing taxing and expenditure schedules. What adjustments in the schedules need to be made so as to motivate all districts to choose the optimum spending range for the educational requirements of their students, and at the same time meet whatever practical restraints exist in the state budget.

We could continue to add topic after topic to this list. The point is that educational policy *can* be developed with more precision than is presently the case. We ourselves expect to continue our analysis of the large amount of data in our hand, but these data are mainly financial and, though interesting, are more useful in describing historical events than in predicting future behaviors of households in the public sector.

To close on a more cheerful note, however, we feel we have accomplished our task, namely, in our largest state, a state characterized by a complicated system of school government, to develop workable responses to the *Serrano* issue.

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